



## Body Repairs SpaceFox, Space Cross, Suran, Suran Cross, Sportvan 2006 ➤ Edition 05.2011



## Repair Group overview for Body Repairs

### Repair Group

00 - Technical data

50 - Body - Front part

51 - Body - Central section

53 - Body - Rear section



Technical information should always be available to the foremen and mechanics, because their careful and constant adherence to the instructions is essential to ensure vehicle road-worthiness and safety. In addition, the normal basic safety precautions for working on motor vehicles must, as a matter of course, be observed.



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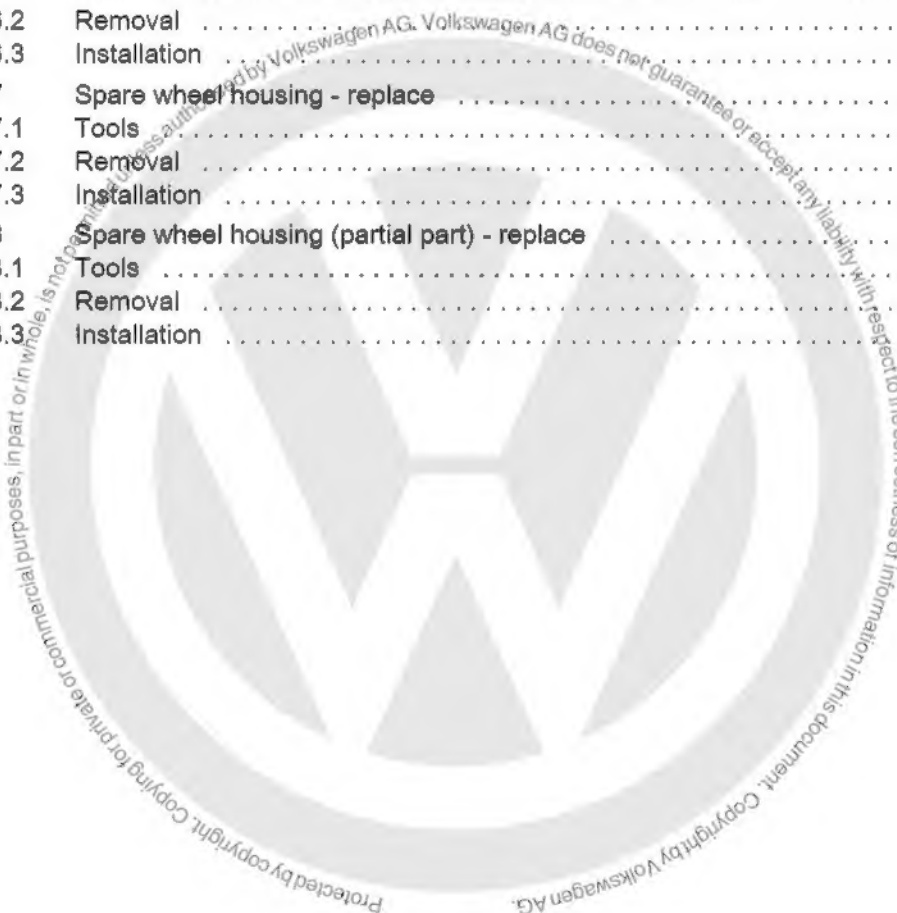
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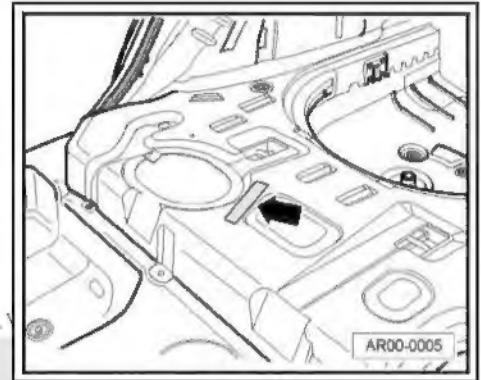


## 00 – Technical data

### 1 Vehicle identification data

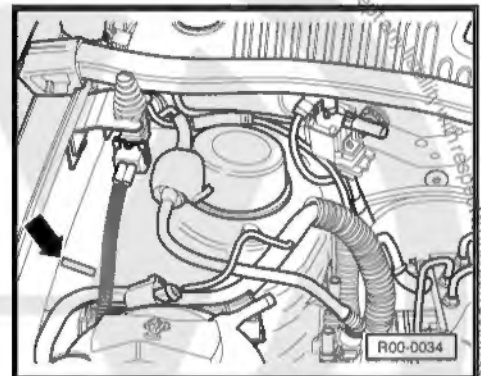
#### 1.1 Vehicle identification number

The vehicle identification number (chassis number) -arrow- is engraved on the floor plate below the back seat. It becomes visible when the floor lining is lifted.

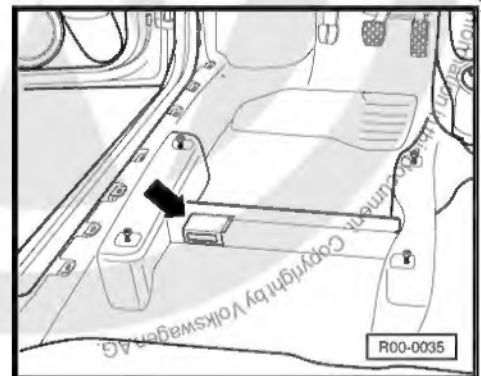


#### 1.2 Disposable labels (only for Brazil) - VIS

The first VIS label -arrow- is placed over the right front suspension housing.

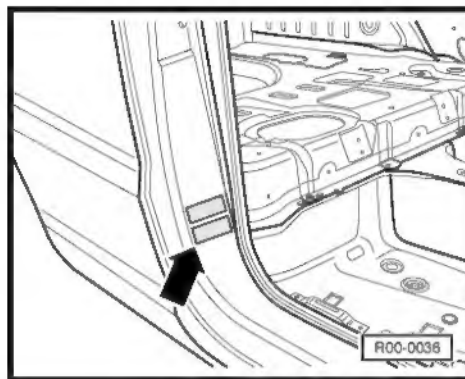


The second VIS label -arrow- is on the left seat's cross member and is visible from the rear side through an opening in the floor lining.





The third VIS label -arrow- is on the right B pillar. It is visible when the front door is opened.



### 1.3 Destructible labels (only for Brazil) - VIS - replacement



#### WARNING

*These labels are valid only for the Brazilian market.*

Disposable labels - VIS shall be exclusively supplied to public traffic agencies (Detran / Ciretran) or to Security agencies (Police Station) by means of an official request, the original copy of which shall be sent to:

Volkswagen do Brasil Ltda

To Internal P. O. Box 1048

Via Anchieta, Km 23.5

Zip Code: 09823-990 - São Bernardo do Campo - S.P.







## 2 Foam parts/mountings

Foam parts/mountings are assembled on the body gaps in this vehicle. These parts are made of foam and are self-adhesive. The mountings are metallic and have foam lips that are fixed with plastic clamps.

These foam parts/mountings minimize the motion noise propagation into the vehicle.

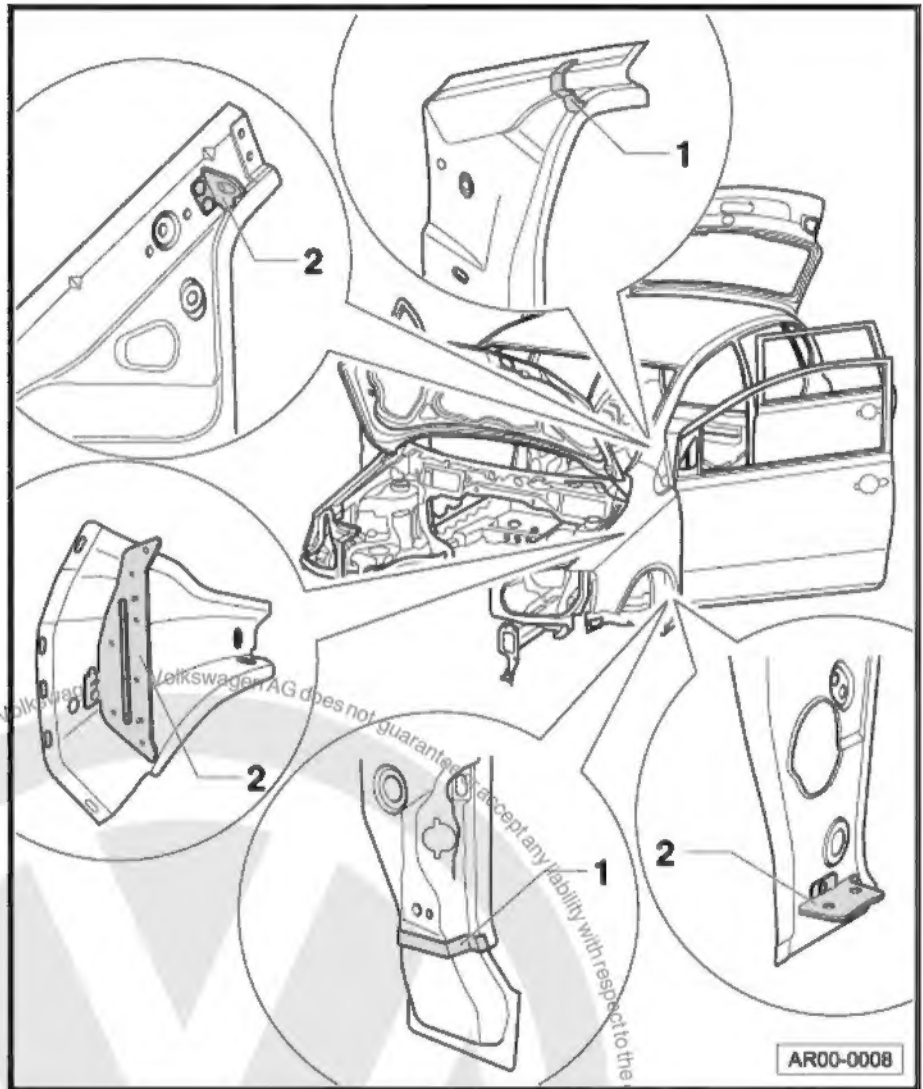
The following illustrations show the locations on the body where foam parts/mountings are installed.

### 1 - Self-adhesive foam part

- EVA - Ethylene-Vinyl-Acetate

### 2 - Metallic support for foam

- Electro galvanized steel + EVA - Ethylene-Vinyl-Acetate



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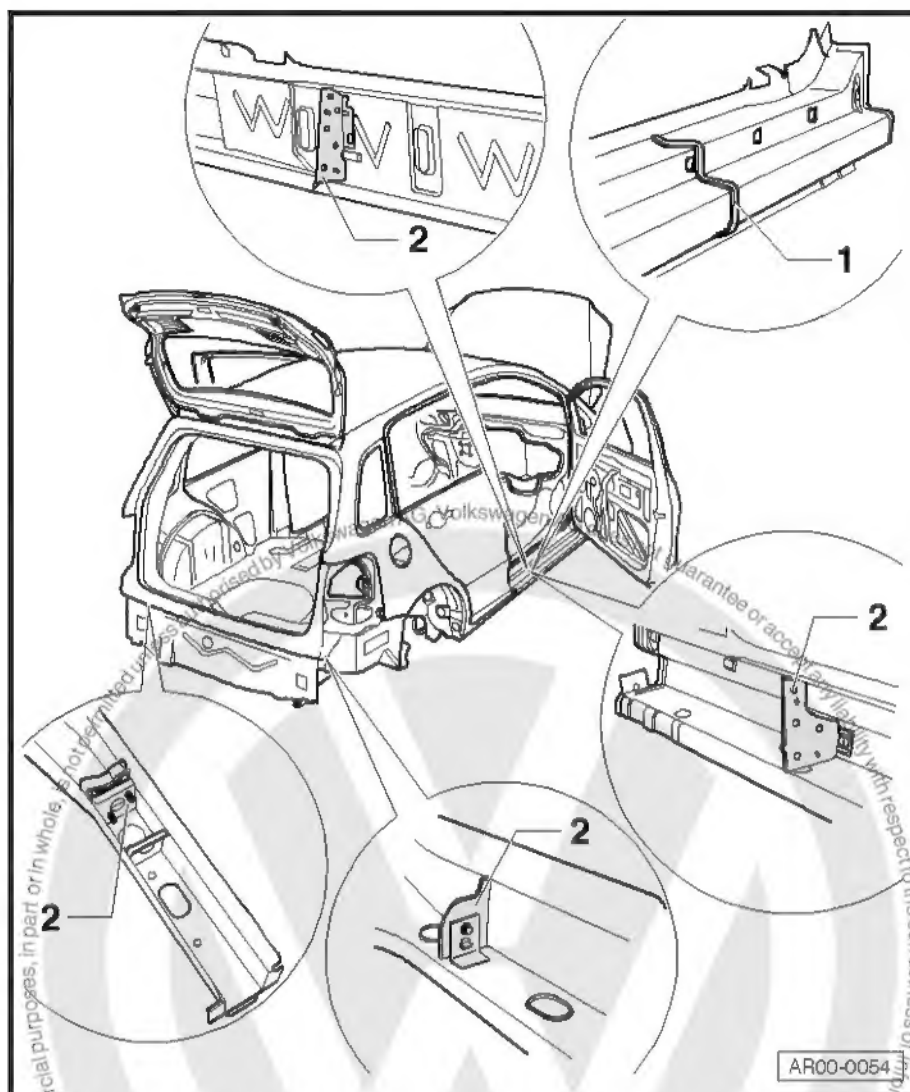


1 - Self-adhesive foam part

- EVA - Ethylene-Vinyl-Acetate

2 - Metallic support for foam

- Electro galvanized steel + EVA - Ethylene-Vinyl-Acetate



Note

Both parts and mountings shall be replaced whenever their installation area is being repaired, since the seal foam deforms permanently.



### 3 High-resistance body plate

Work process with high-resistance body plates → General Information: Body Repairs, General Body Repairs ; Work process .

High strength body panels are used in the following body areas.

1 - Front panel parts, seat crossmember, water deflector panel (no illustration)

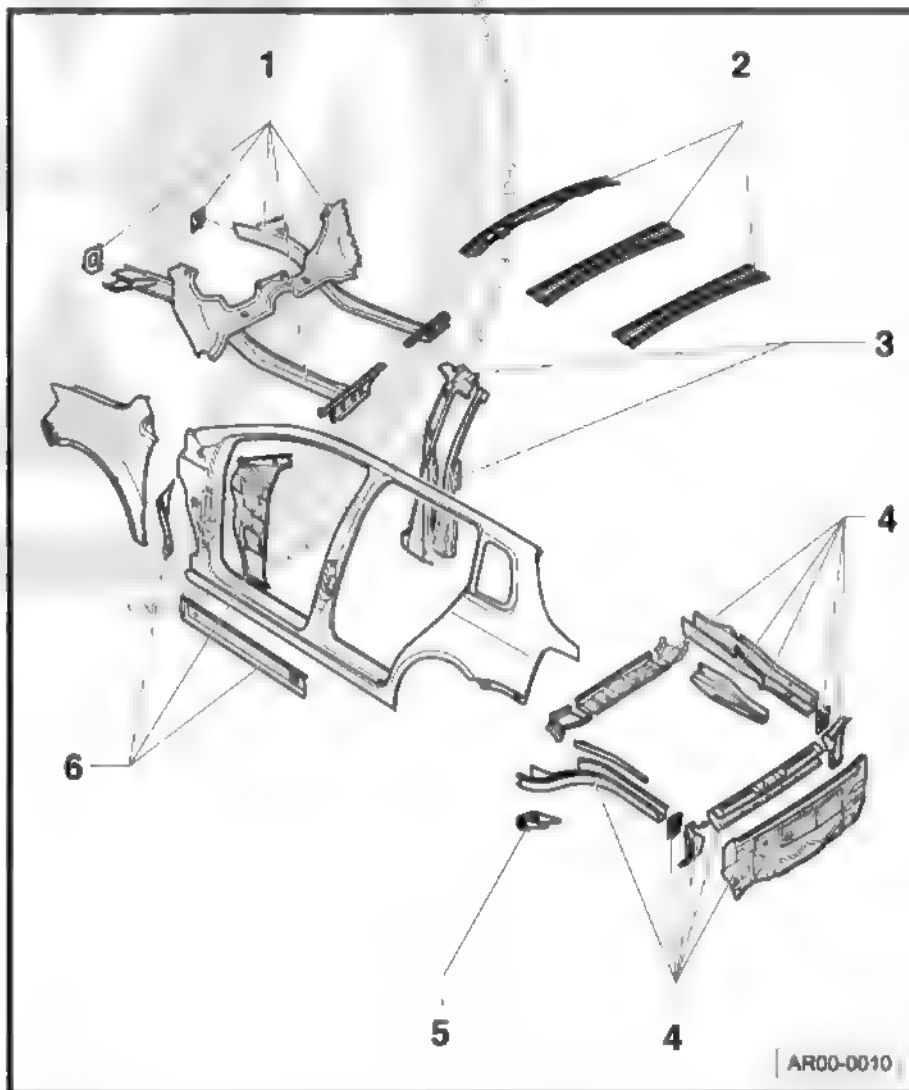
2 - Front roof cross member and roof reinforcements

3 - Internal part of B pillar and B pillar reinforcement

4 - Longitudinal member and crossmember with rear reinforcements and rear plate with latch mounting

5 - Rear axle support

6 - Floor reinforcement; A-Pillar inner part and A-Pillar support plate





## 4 Laser welding

Only the roof is laser welded in this vehicle.

In laser welding, a high energy light beam is conducted over the welding area by lenses and optical fibers.

In the welding process, the upper plate undergoes a complete fusion welding and the lower plate undergoes partial fusion welding, without adding material

When repairing, laser weld seams are replaced by Mig SG weld points and RP resistance weld points.





## 5 Body clearance measurements





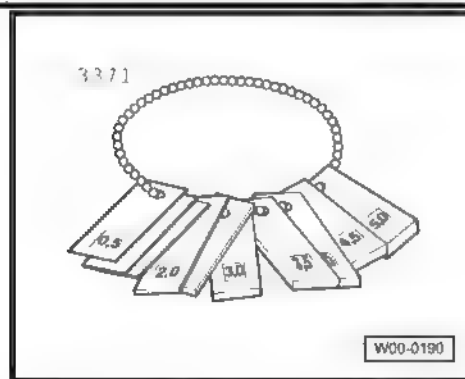
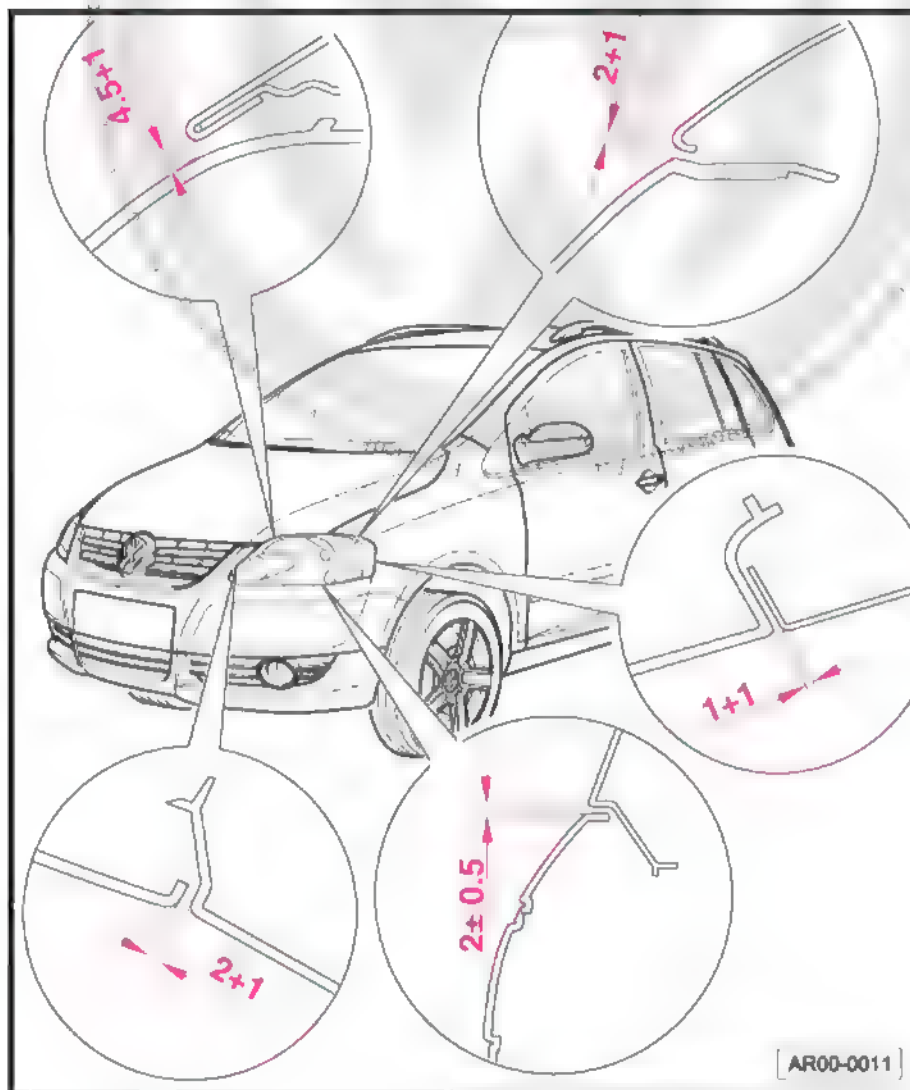
## 5.1 Front portion of the body (up to model-year 2010)

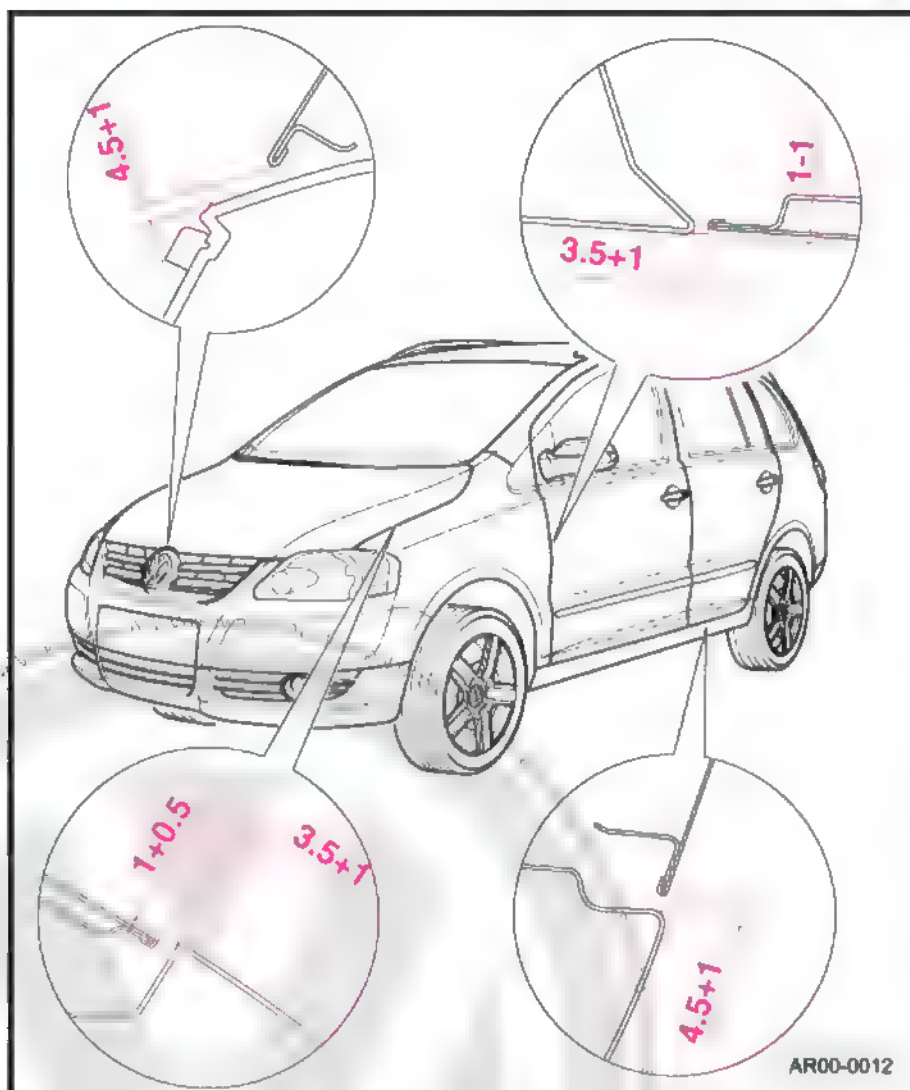


### Note

Using Adjustment gauge -3371- to adjust or control the clearance dimensions.

Clearance measurements are always measured in mm.



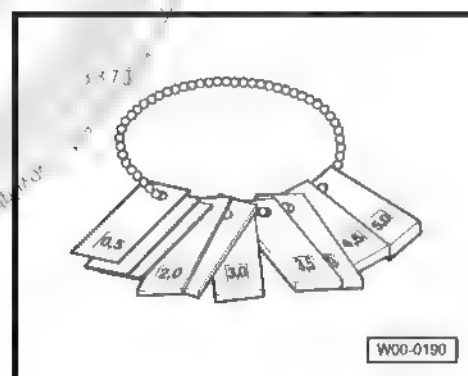


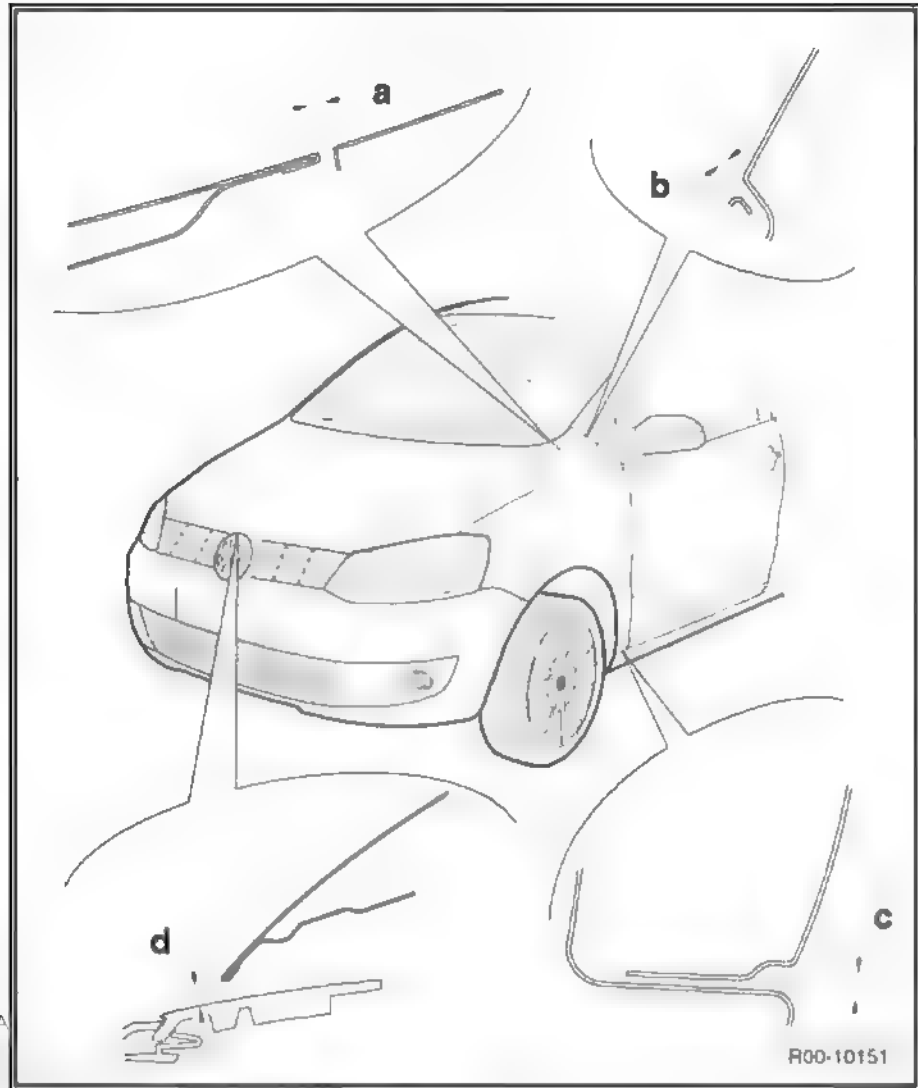
## 5.2 Front portion of body (up from model-year 2011)



### Note

Using Adjustment gauge -3371- to adjust or control the clearance dimensions.





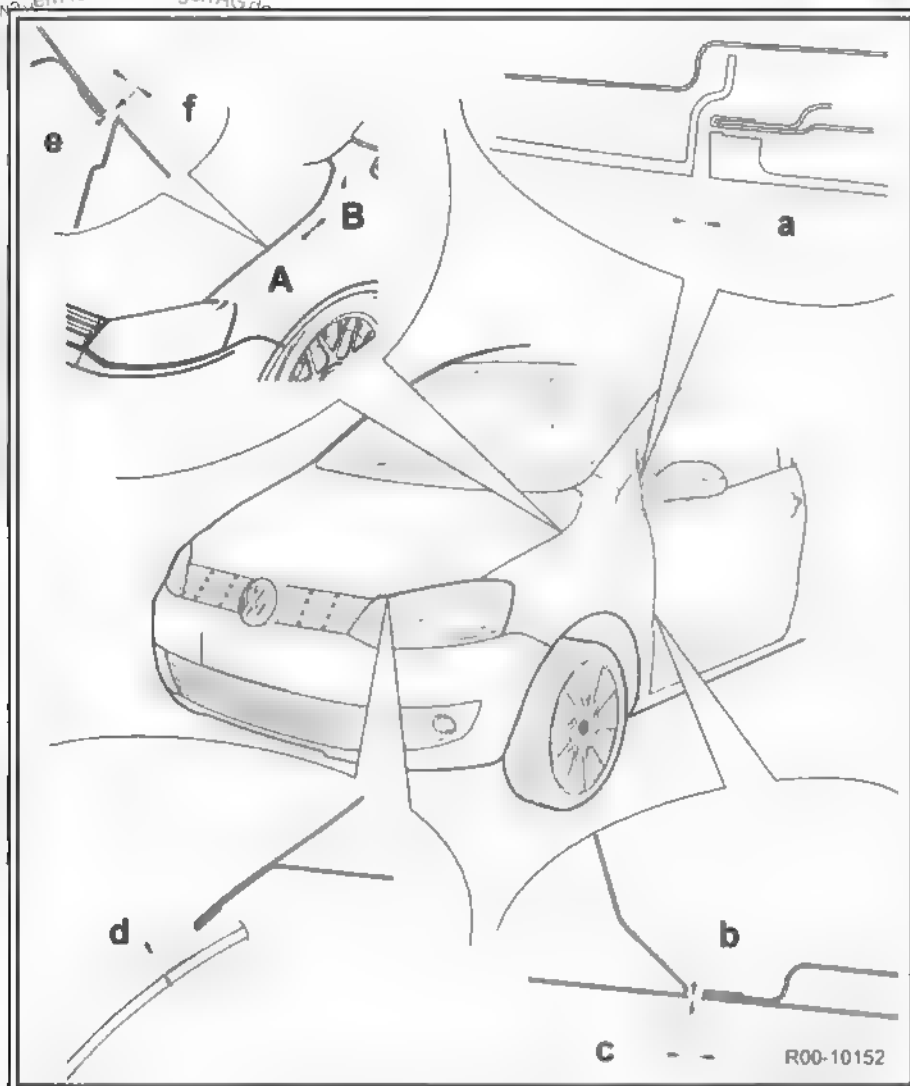
Measurement-a -  $3.0 \text{ mm} \pm 0.5 \text{ mm}$

Measurement-b -  $2.0 \text{ mm} \pm 1 \text{ mm}$

Measurement-c -  $5.0 \text{ mm} \pm 0.5 \text{ mm}$

Measurement-d -  $4.0 \text{ mm} \pm 0.5 \text{ mm}$





Measurement-d- - 3.5 mm  $\pm$  0.5 mm

Measurement-b- - 0 mm + 1 mm

Measurement-c- - 3.5 mm  $\pm$  0.5 mm

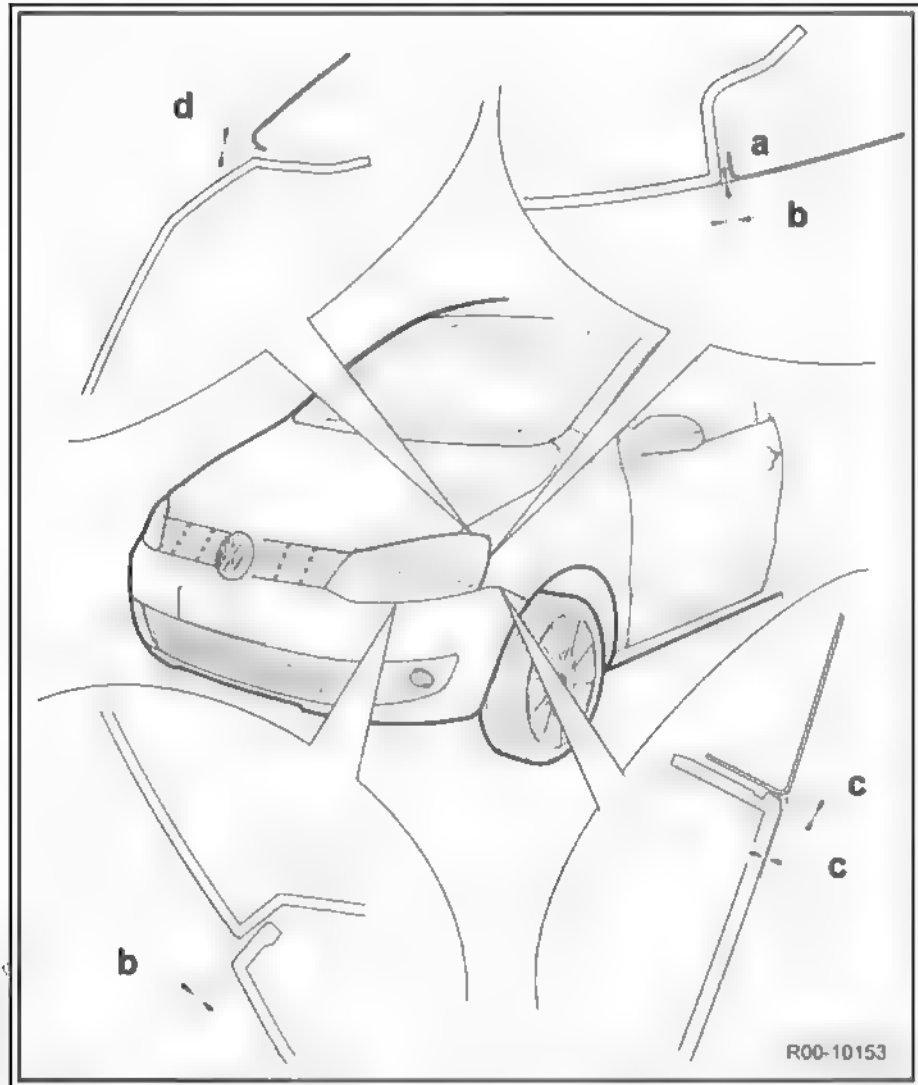
Measurement -d- - 5.0 mm  $\pm$  0.5 mm

Measurement -and- - 2.0 mm  $\pm$  1 mm

- Region A - 1.0 mm to 1.7 mm  $\pm$  0.5 mm
- Region B - 1.7 mm to 0.0 mm  $\pm$  0.5 mm

Measurement-f -

- Region A - 3.2 mm  $\pm$  0.5 mm
- Region B - 3.2 mm to 3.0 mm  $\pm$  0.5 mm





Measurement-nd - - 0 mm - 0.5 mm

Measurement-b- - 2.0 mm  $\pm$  0.5 mm

Measurement -c- - 0 mm  $\pm$  0.5 mm

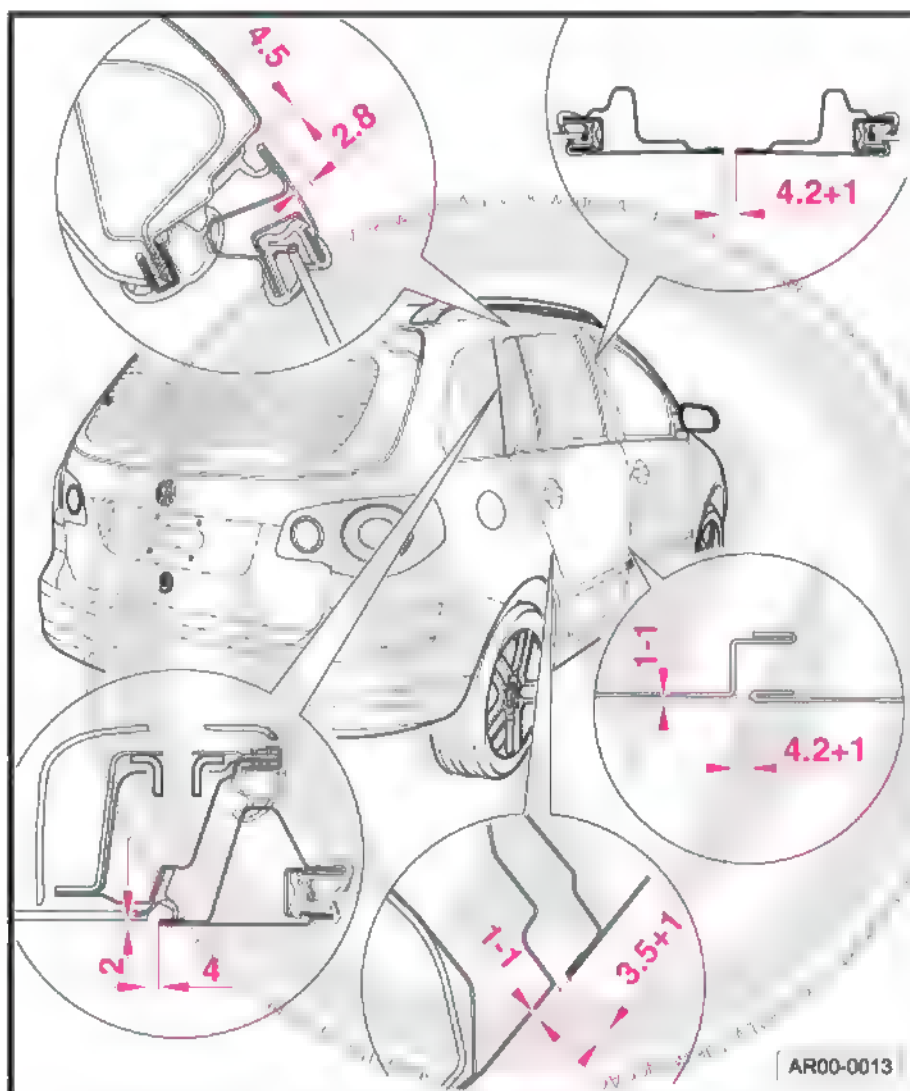
Measurement -d- - 5.0 mm  $\pm$  0.5 mm

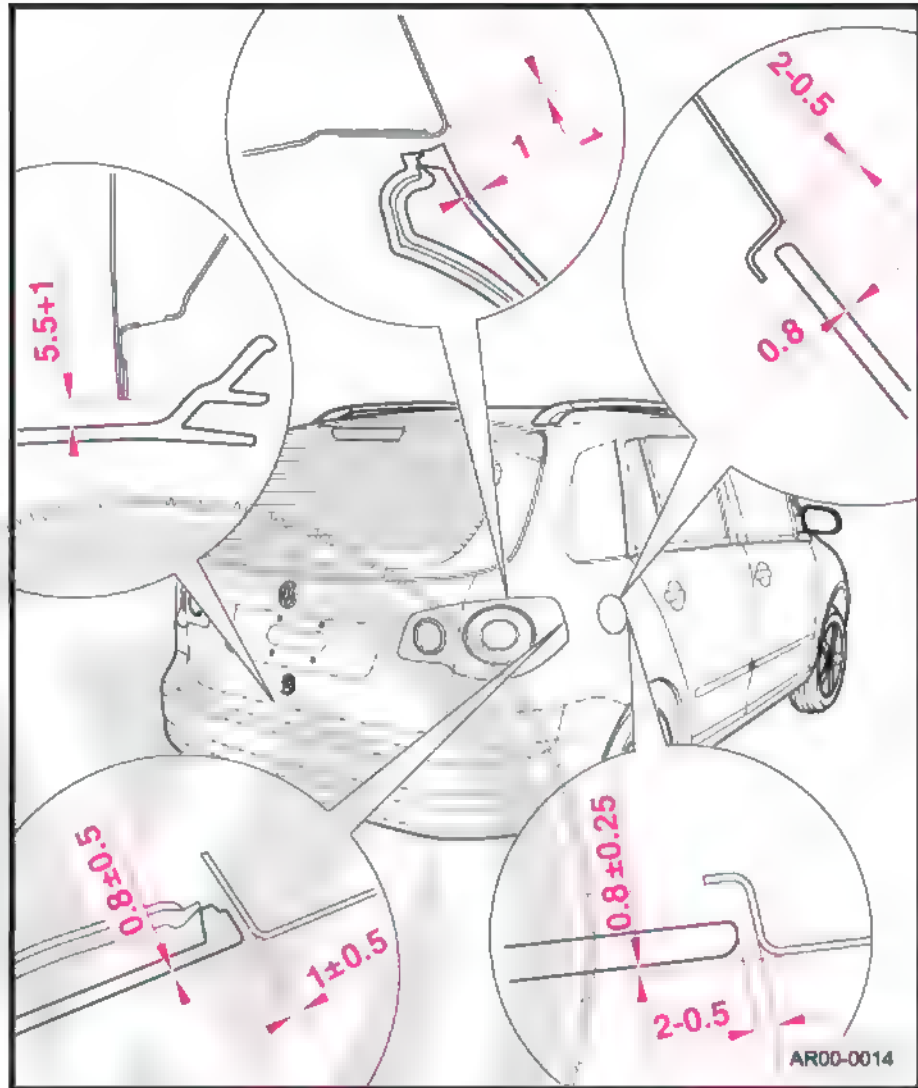
### 5.3 Rear portion of the body (up to model-year 2010)

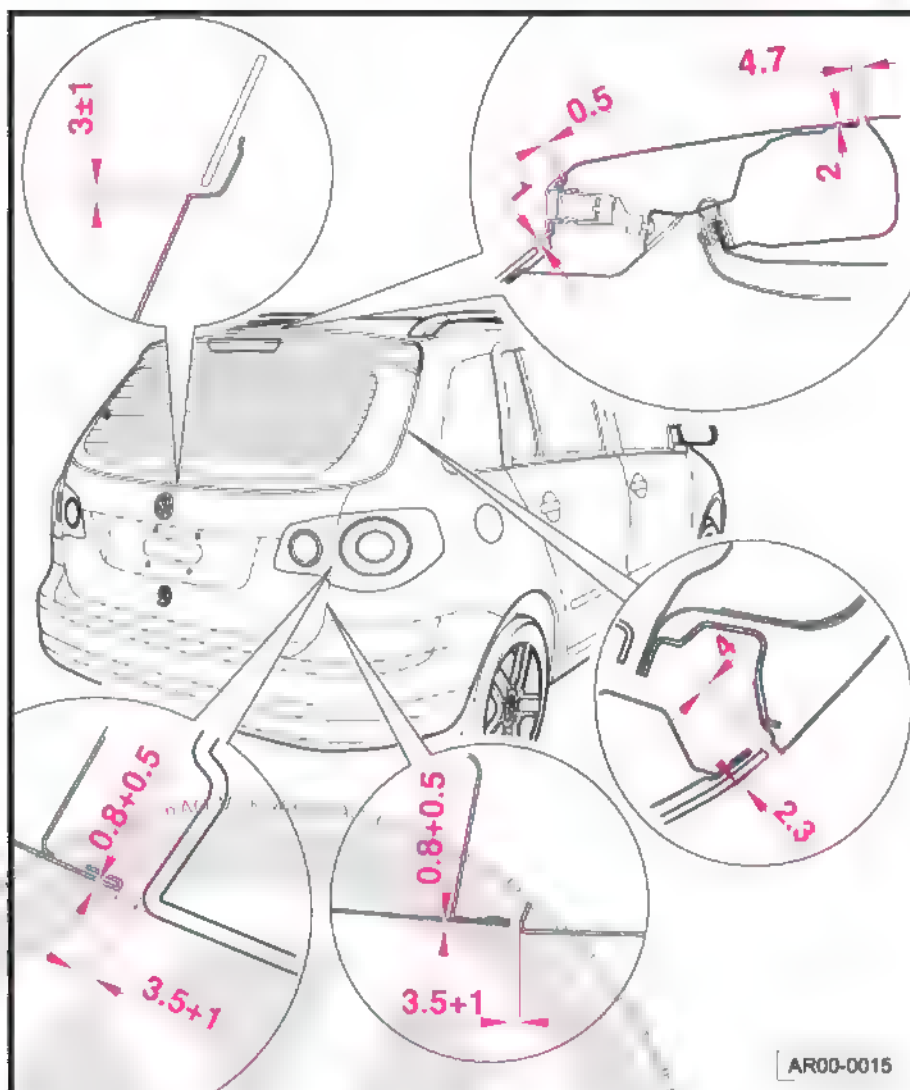


#### Note

- ◆ Using Adjustment gauge -3371- to adjust or control the clearance dimensions.
- ◆ Clearance measurements are always measured in mm.





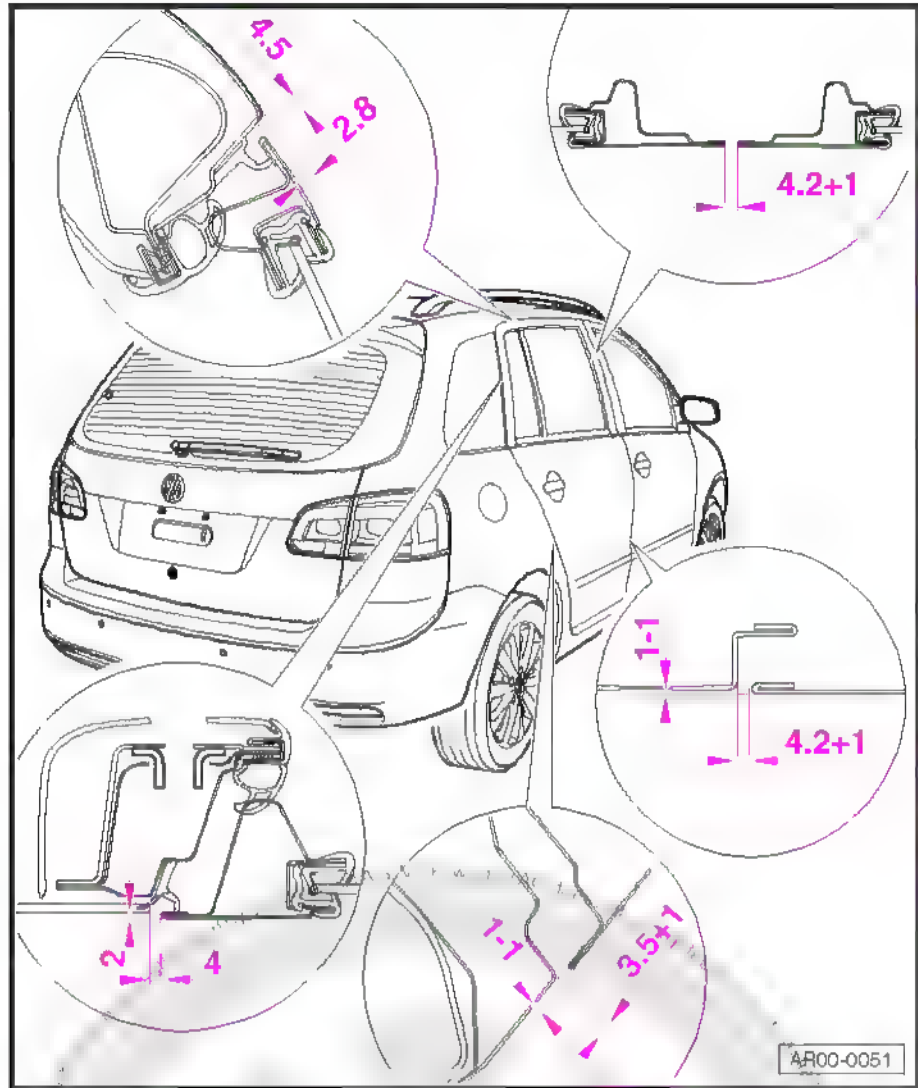


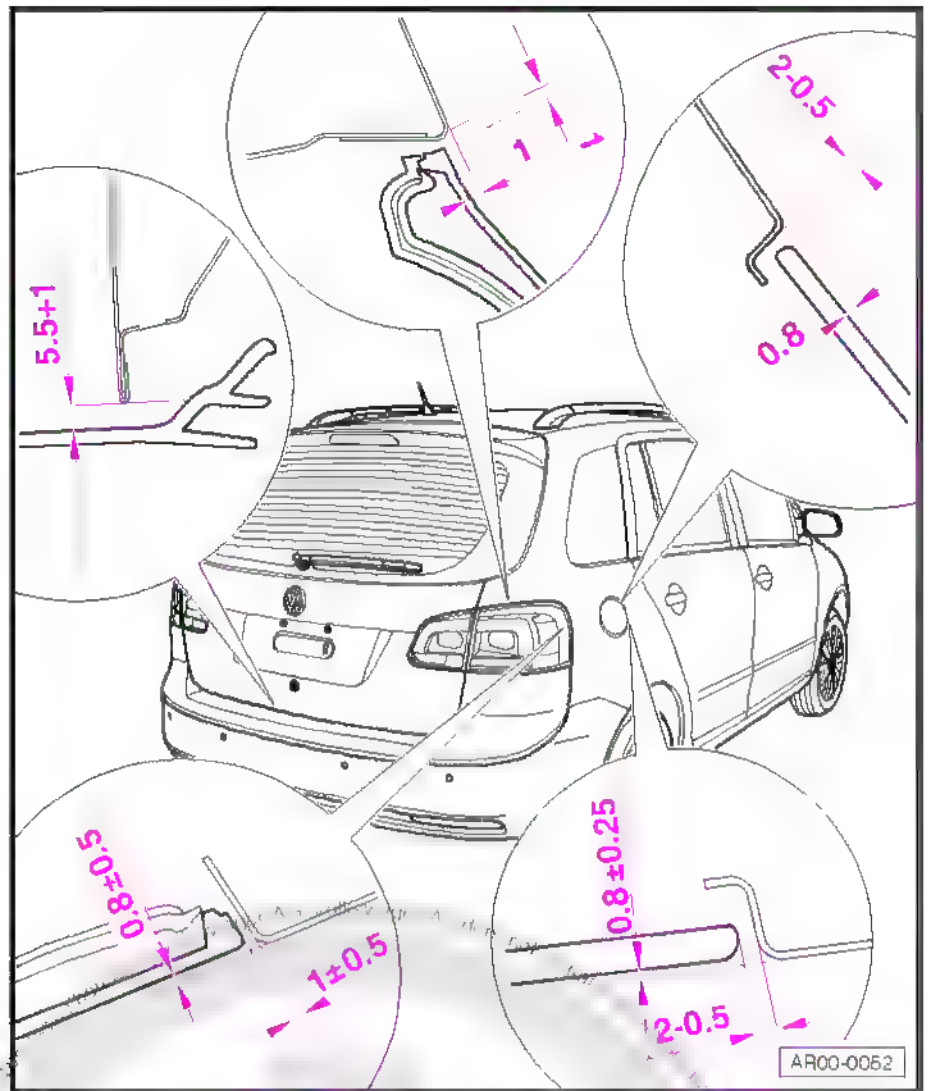
#### 5.4 Rear portion of body (up from model-year 2011)

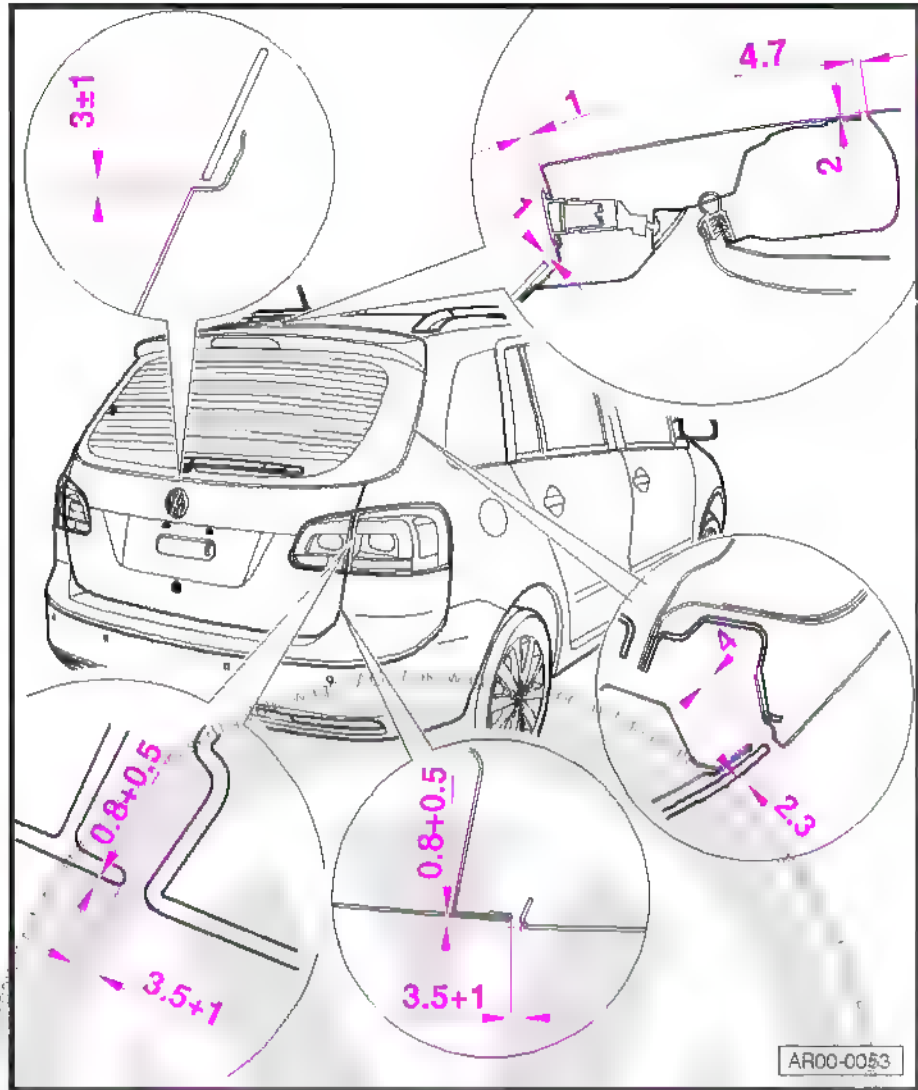


##### Note

- ◆ Using Adjustment gauge -3371- to adjust or control the clearance dimensions.
- ◆ Clearance measurements are always measured in mm.











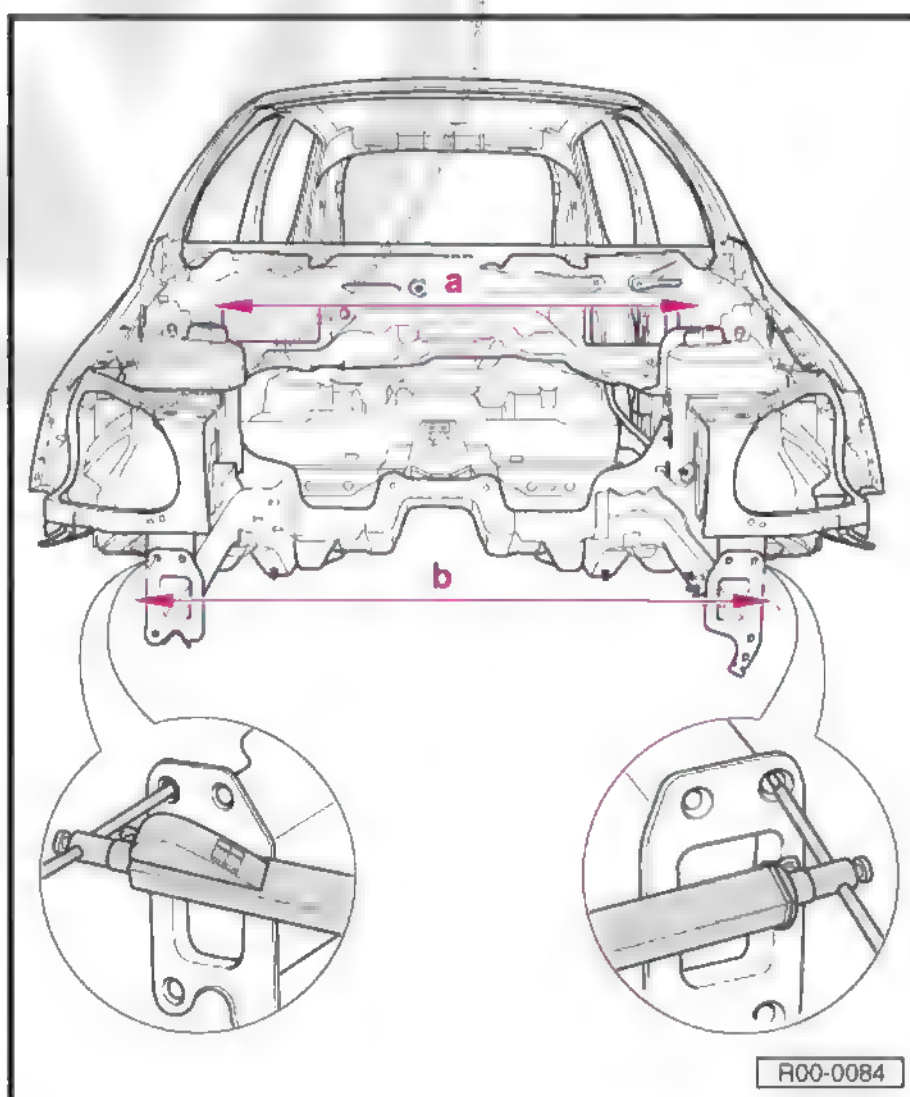
## 6 Body dimensions



### Note

- ◆ *Body measurements are useful for dimensional control. Screws, plugs, linings and complementary parts must have already been removed before the measuring process.*
- ◆ *Use the Telescopic gauge - 41.5 to 92.5 cm -VAS 5159- (ASE 435 028 00 000) to determine the body dimensions or the Telescopic gauge - 92 to 260 cm -VAS 5160- (ASE 435 029 00 000).*

### 6.1 Body - front section

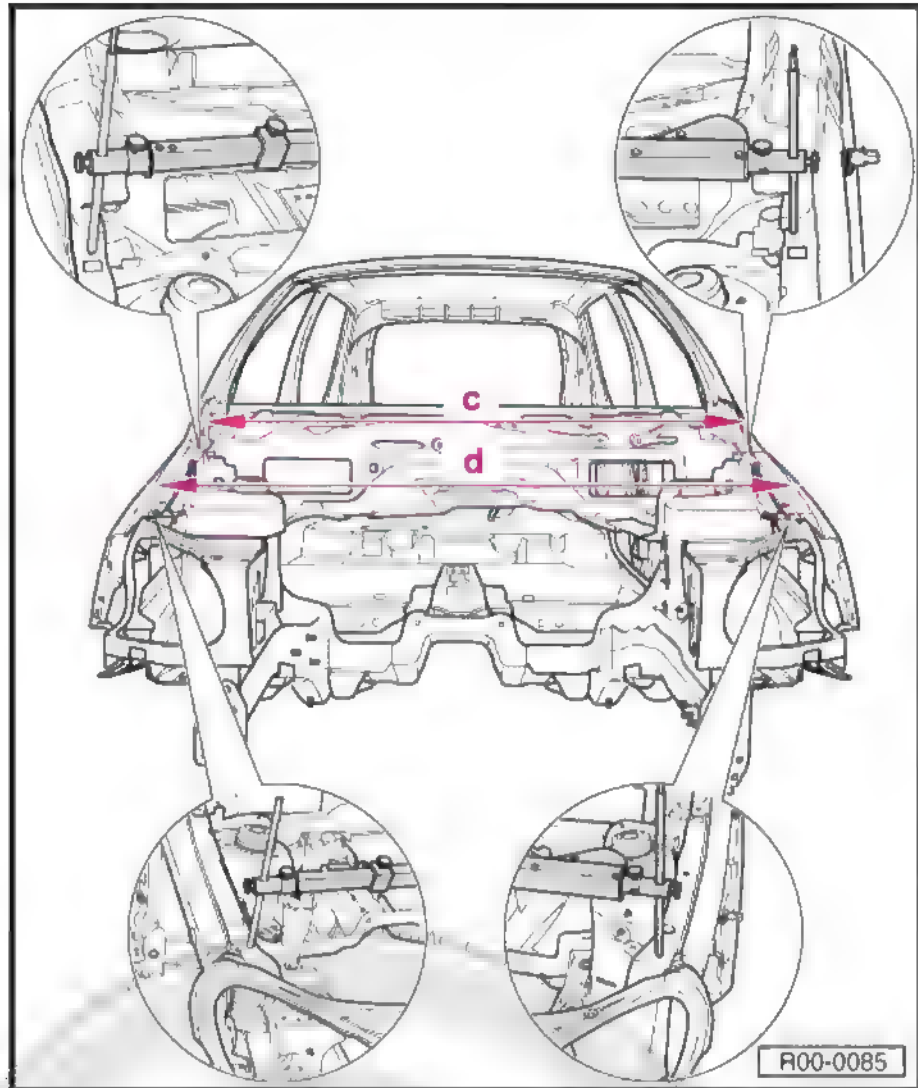


Distance between the suspension column tower holes

$a = 1041 \pm 1 \text{ mm}$

Distance between the front bumper fastening support holes

$b = 947 \pm 1 \text{ mm}$

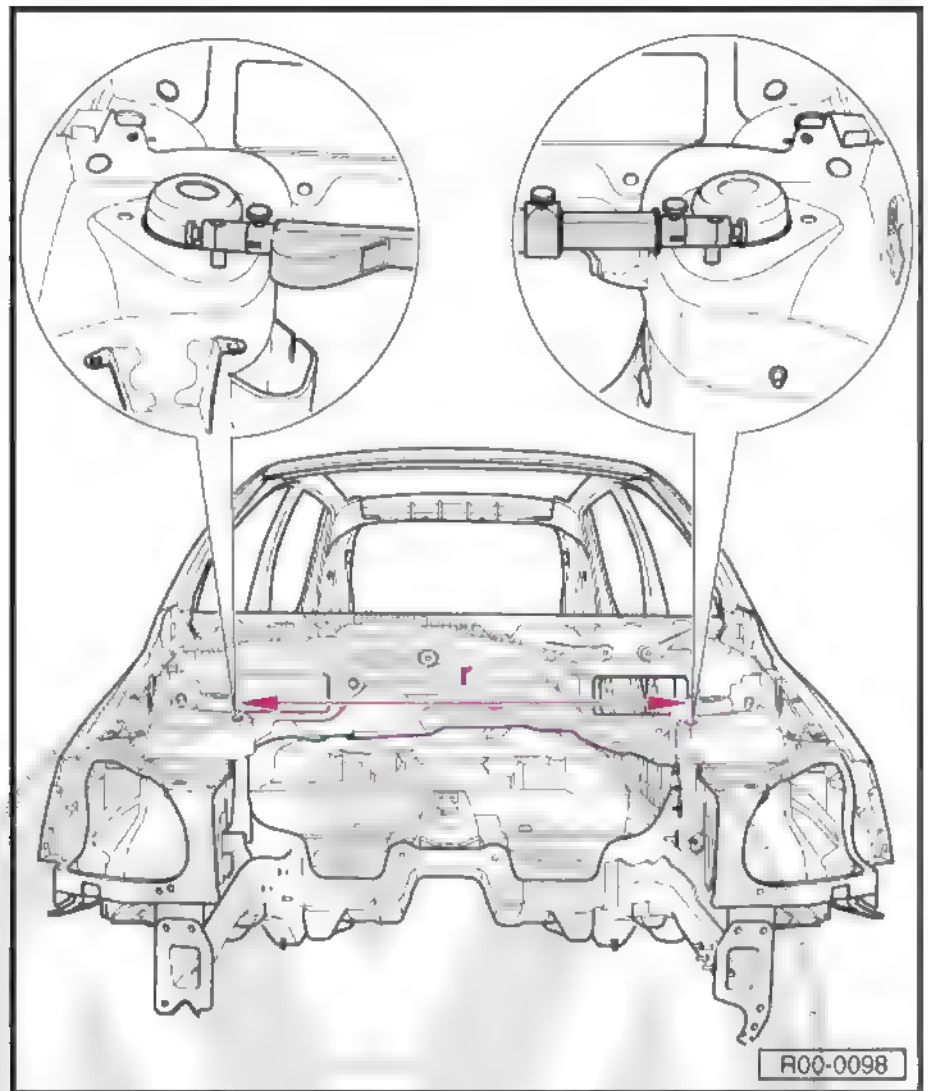


Distance between the holes in the upper wheel housing part (front bonnet hinge fastening)

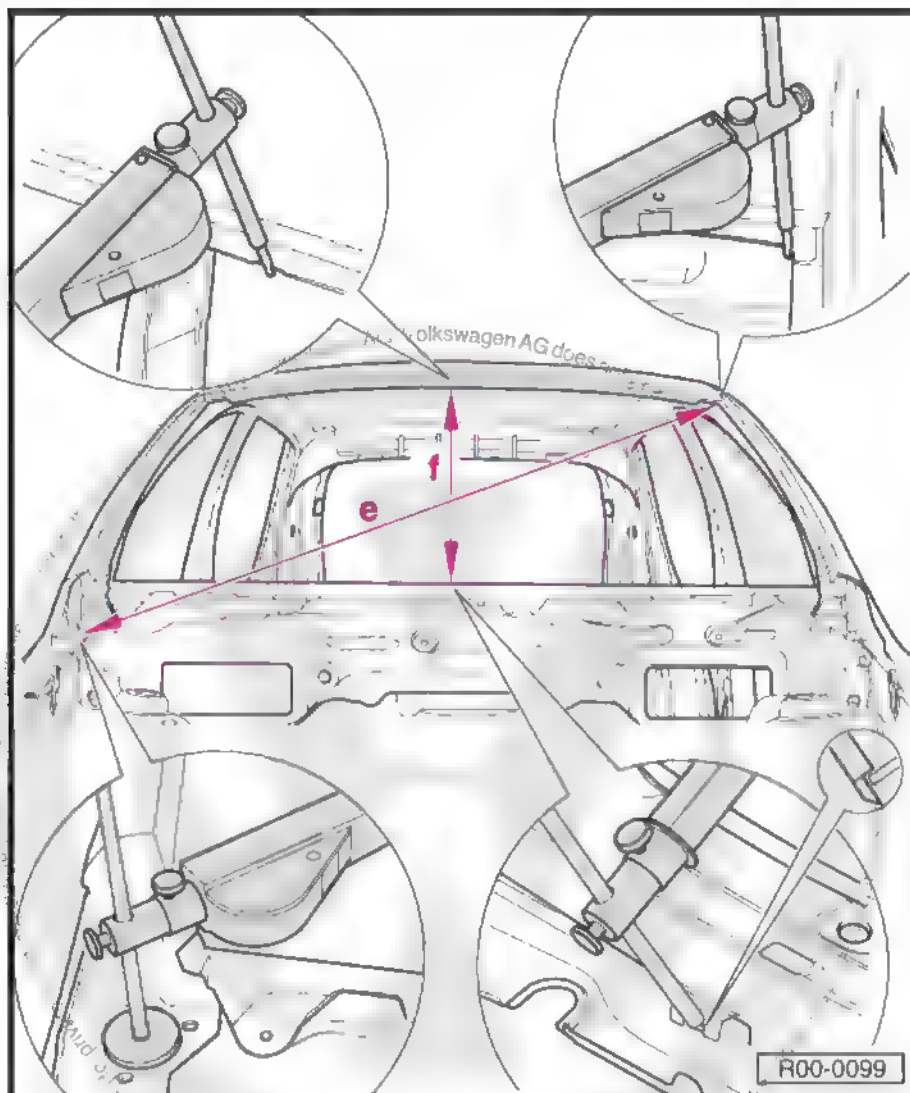
$c = 1302 \pm 1\text{mm}$

Distance between the front wheel housing fastening holes

$d = 1266 \pm 1\text{mm}$



Distance between the holes in the upper wheel housing part  
 $r = 995 \pm 1\text{mm}$



Diagonal distance of the windshield gap

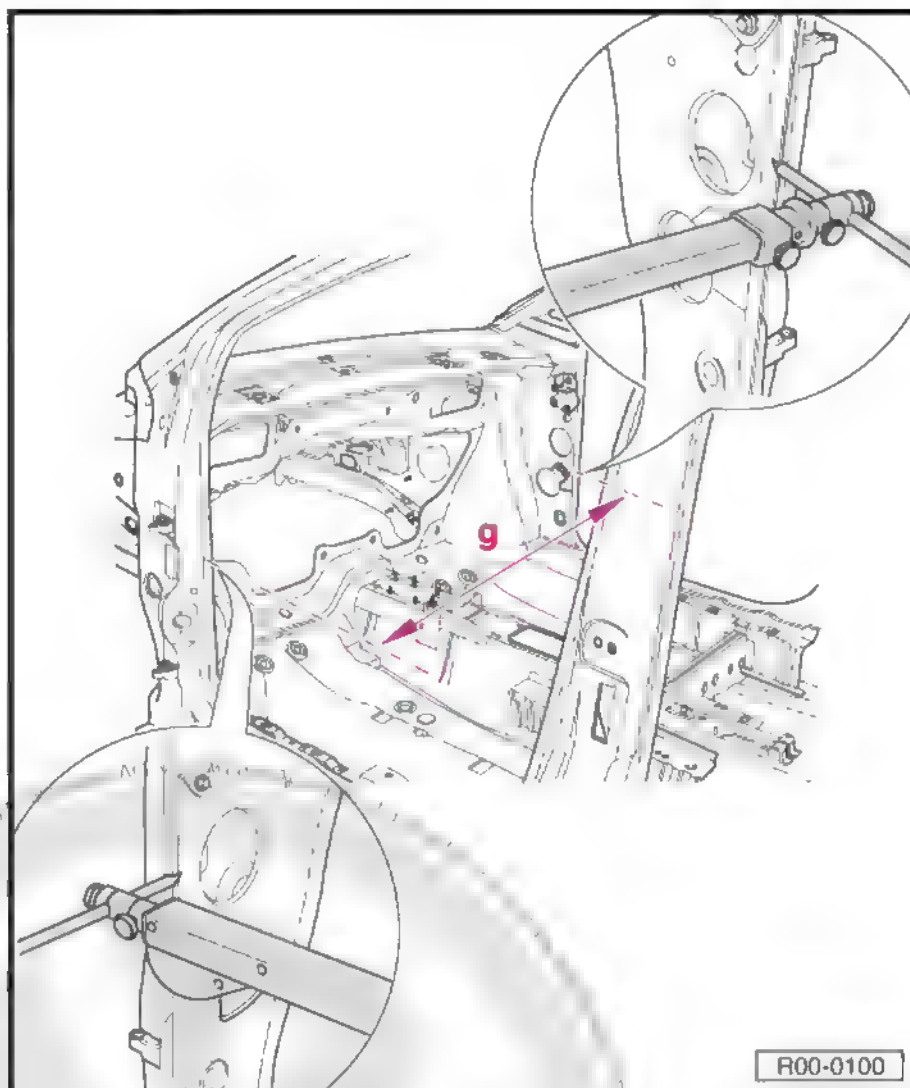
$e = 1435 \pm 1\text{mm}$

Distance between the water deflector panel flange and the roof flange (centre)

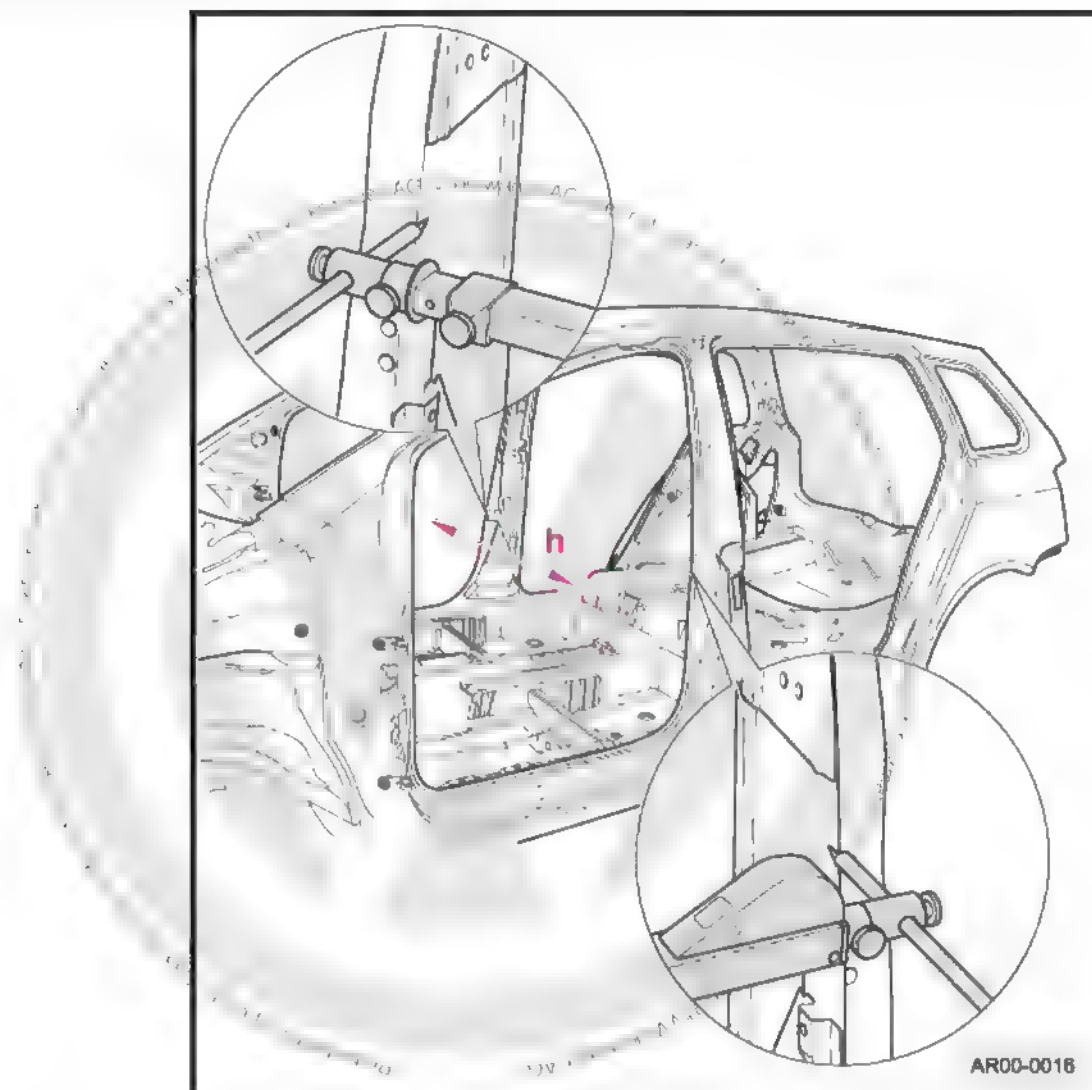
$f = 910 \pm 1\text{mm}$



## 6.2 Body - central section

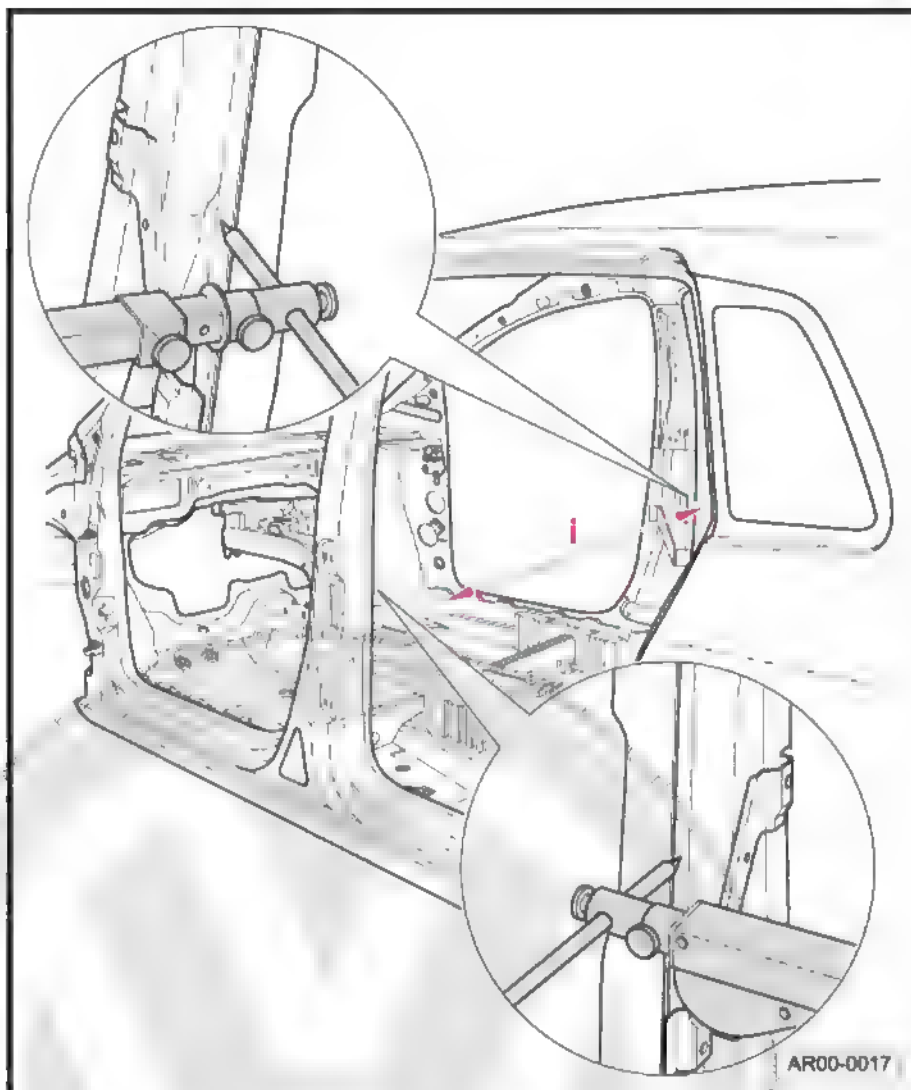


Distance between the A pillars  
 $g = 1353 \pm 2\text{mm}$



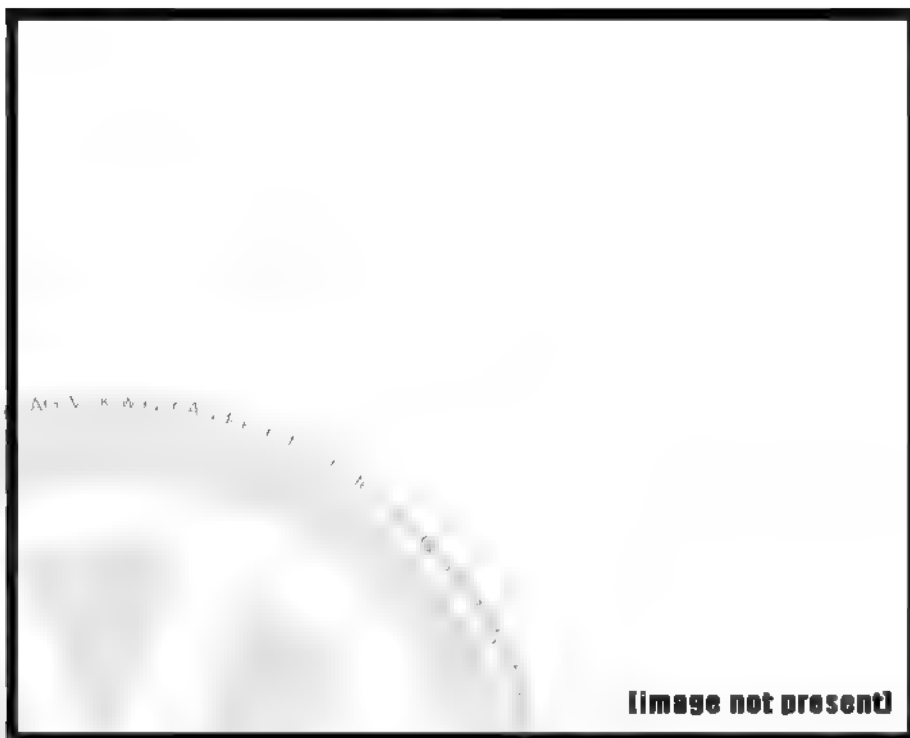
Distance between B pillars (front part)

$h = 1350 \pm 2\text{mm}$



Distance between B pillars (rear part)

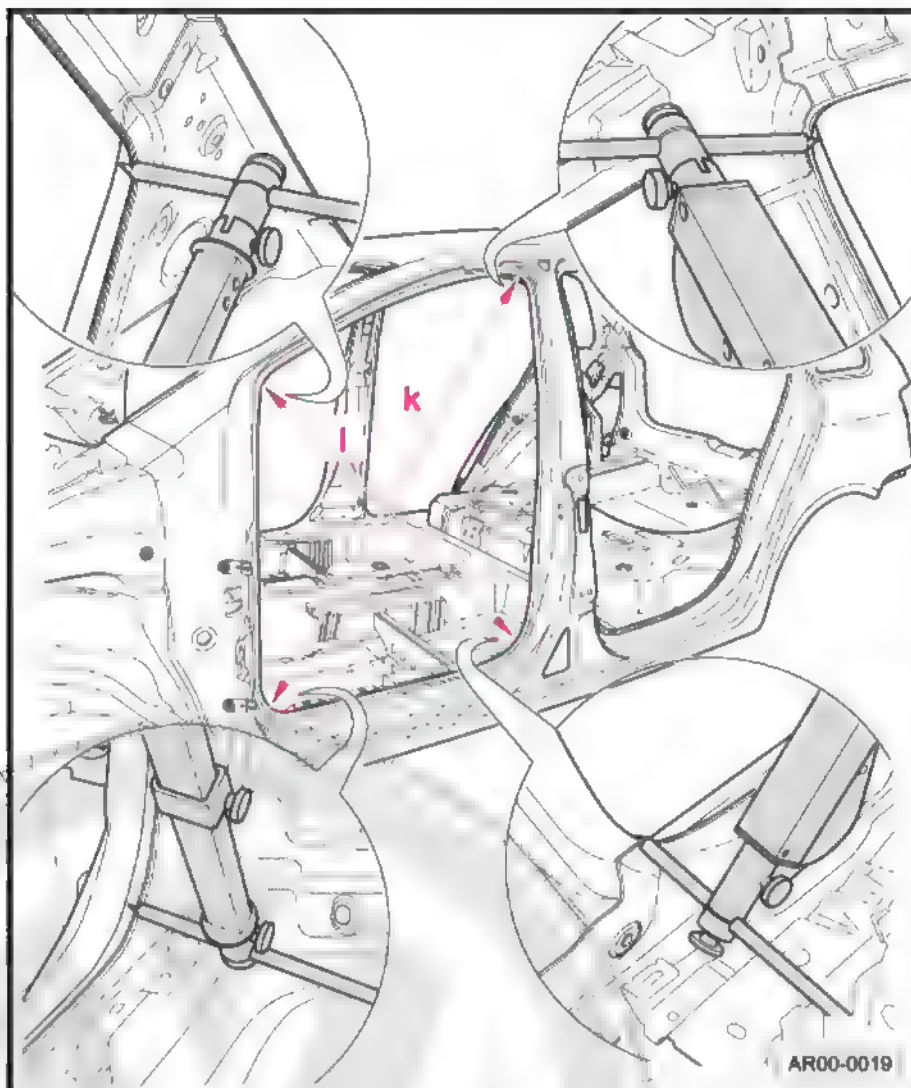
$i = 1355 \pm 2\text{mm}$



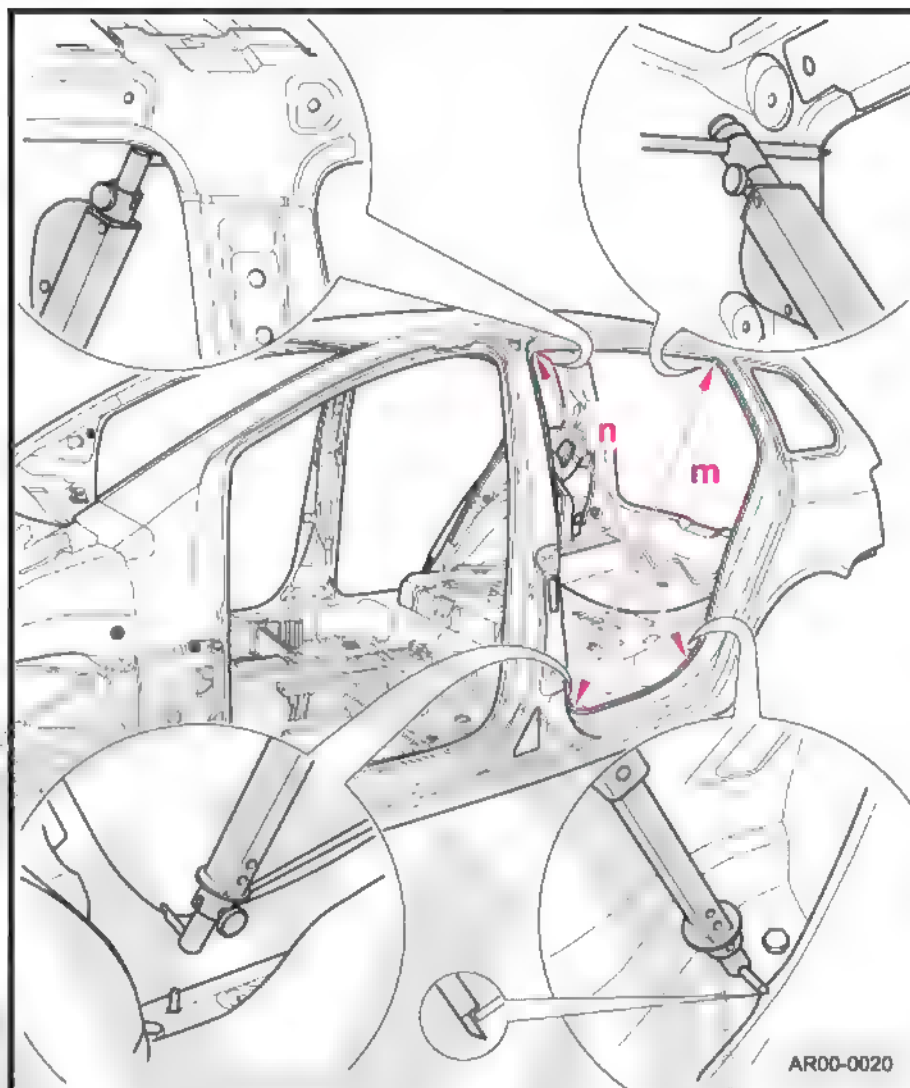
Distance between C pillars

$j = 1295 \pm 2\text{mm}$





Front door gap  
 $k = 1350 \pm 2 \text{ mm}$   
 $l = 1010 \pm 2 \text{ mm}$



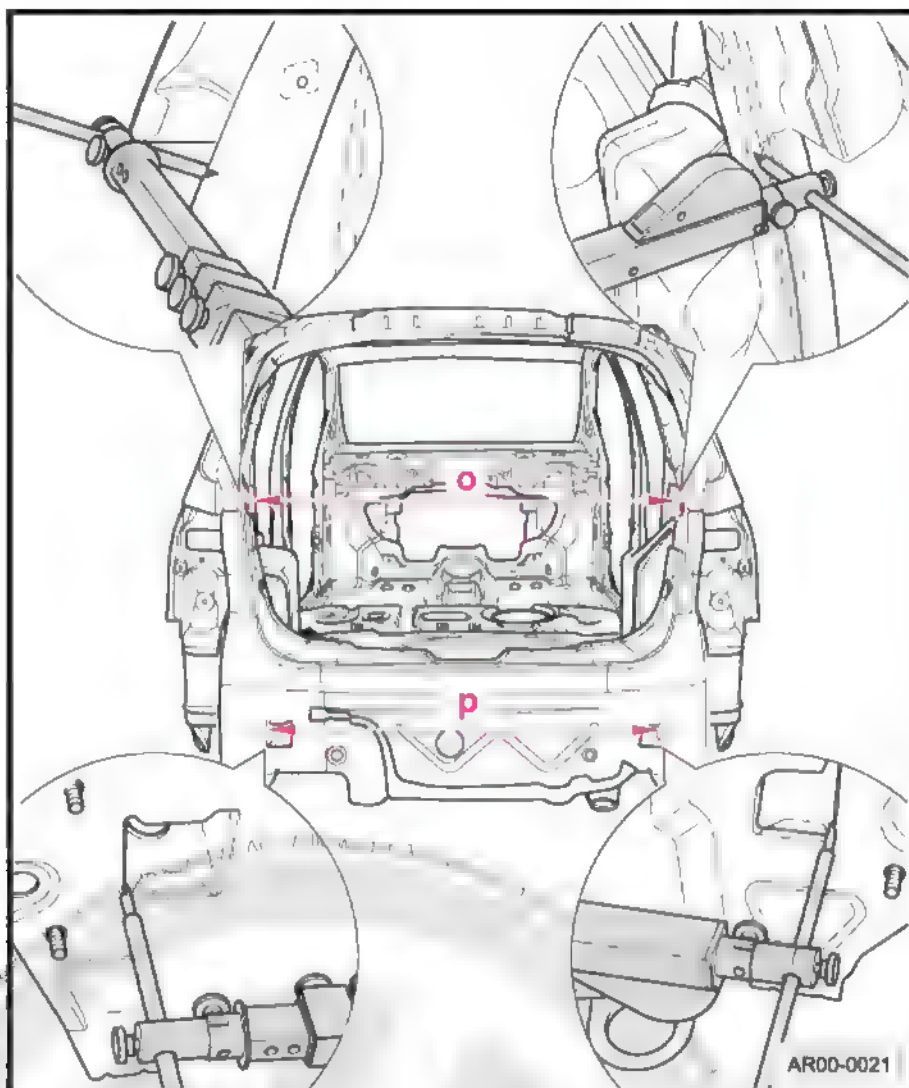
Rear door gap

$m = 1228 \pm 2\text{mm}$

$n = 1070 \pm 2\text{mm}$



### 6.3 Body - rear section

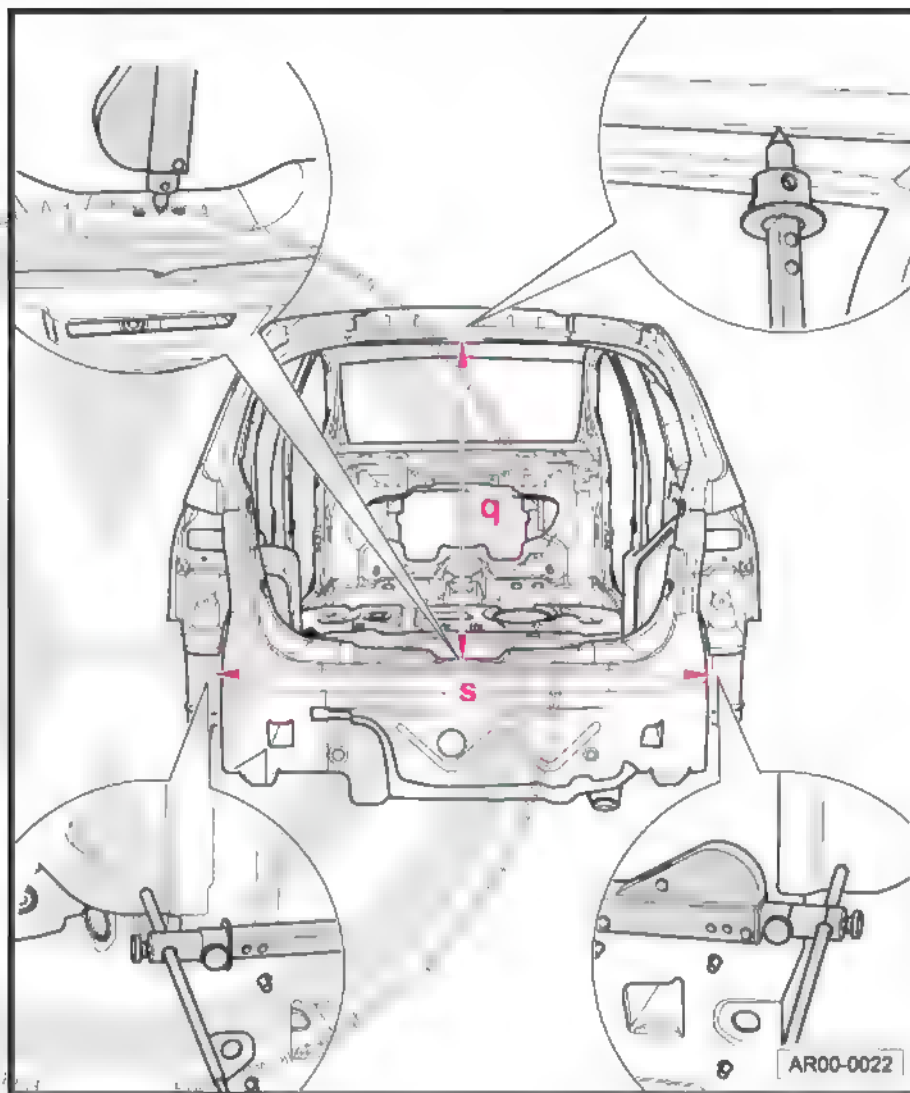


Gap width for trunk

$o = 1053 \pm 2\text{mm}$

Distance between the rear cross members

$p = 952 \pm 2\text{mm}$



Distance between the closing plate edges and the roof edge (in the vehicle center)

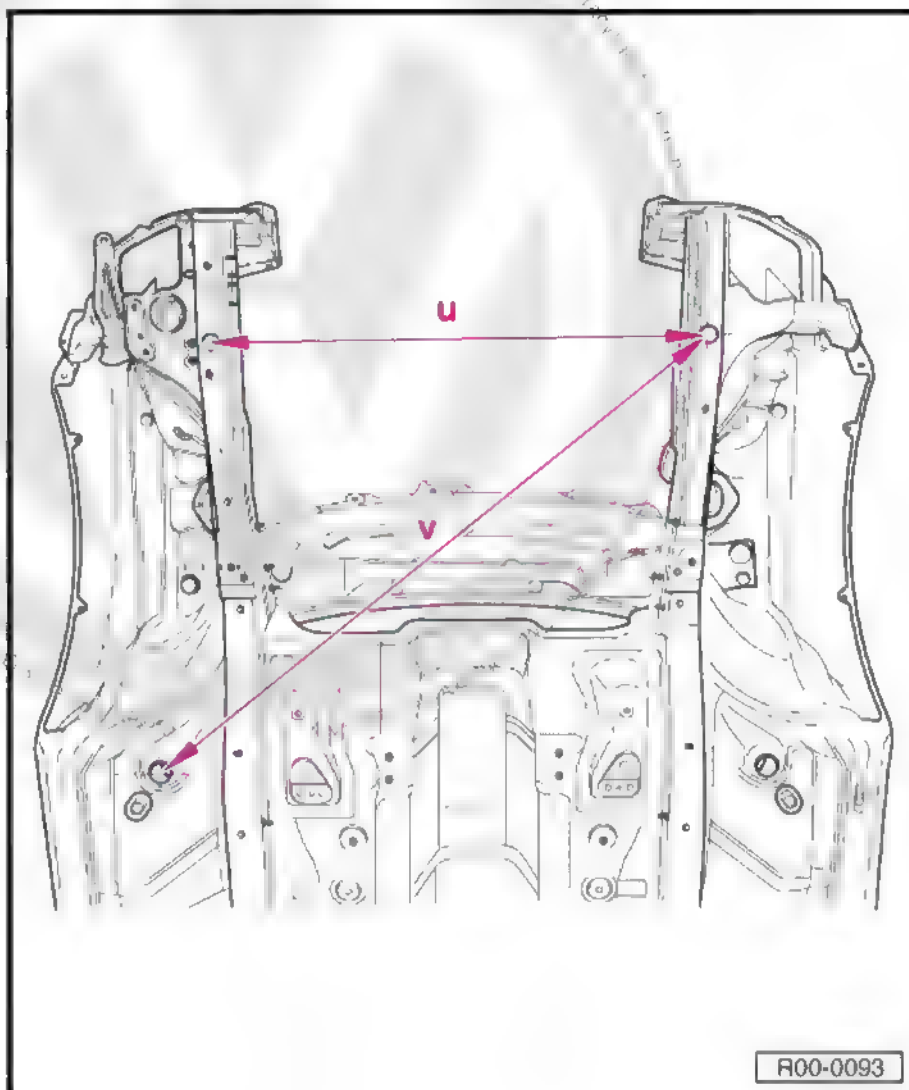
$$q = 721 \pm 2\text{mm}$$

Distance between the rear side panel points

$$s = 1246 \pm 2\text{mm}$$



## 6.4 Body - lower front section

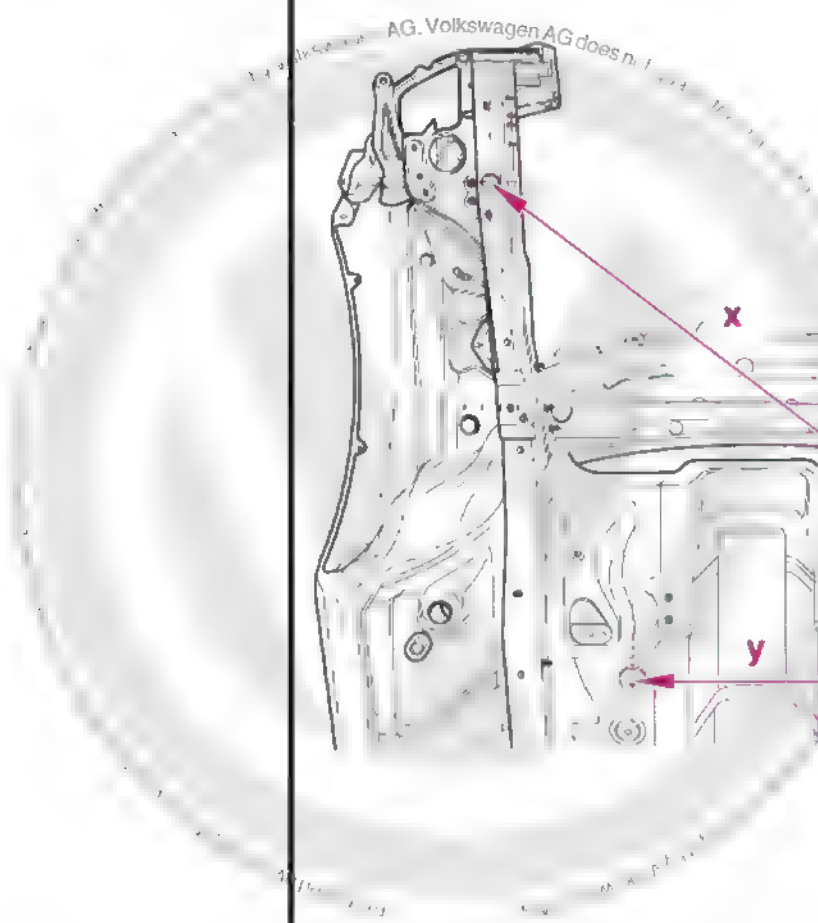
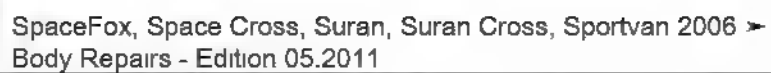


Distance between the front longitudinal members

$$u = 886 \pm 1\text{mm}$$

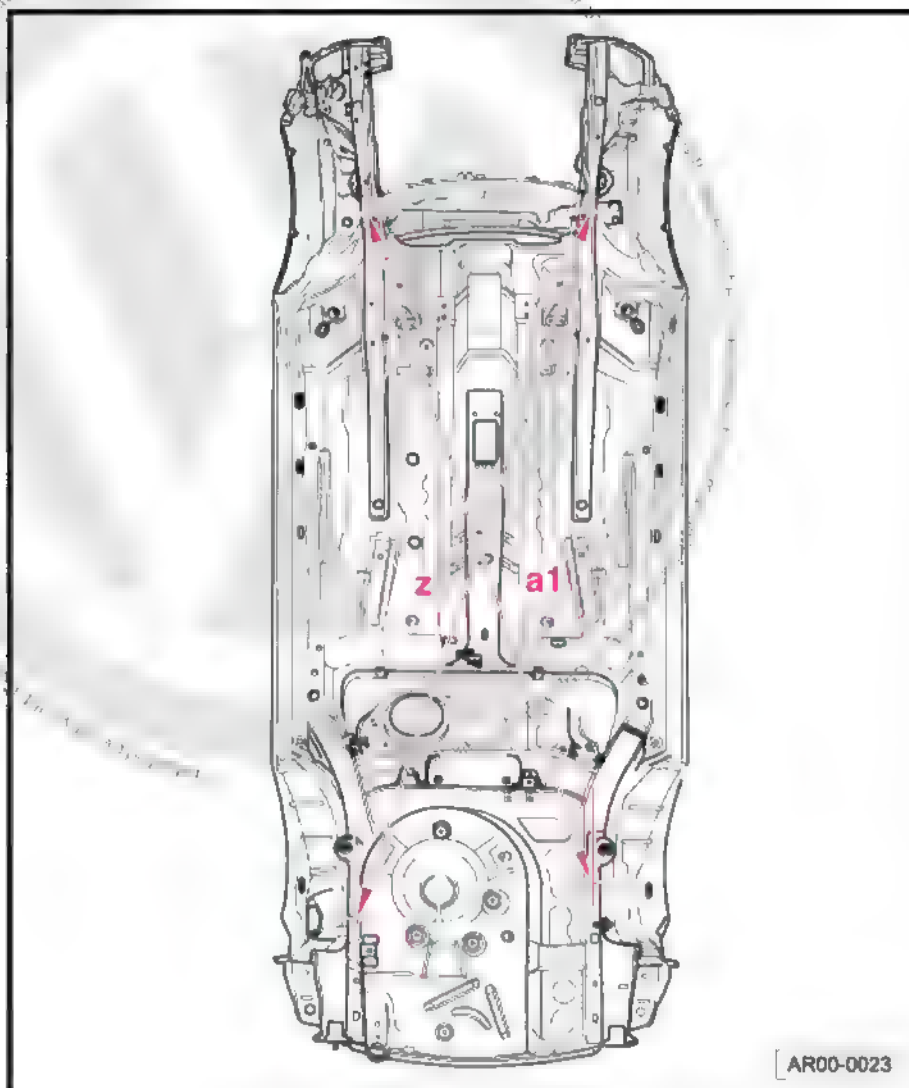
Distance between the right front longitudinal member and the floor master hole

$$v = 1227 \pm 1\text{mm}$$


$$x = 1227 \pm 1 \text{ mm}$$
$$y = 560 \pm 1\text{mm}$$



## 6.5 Body - lower central section



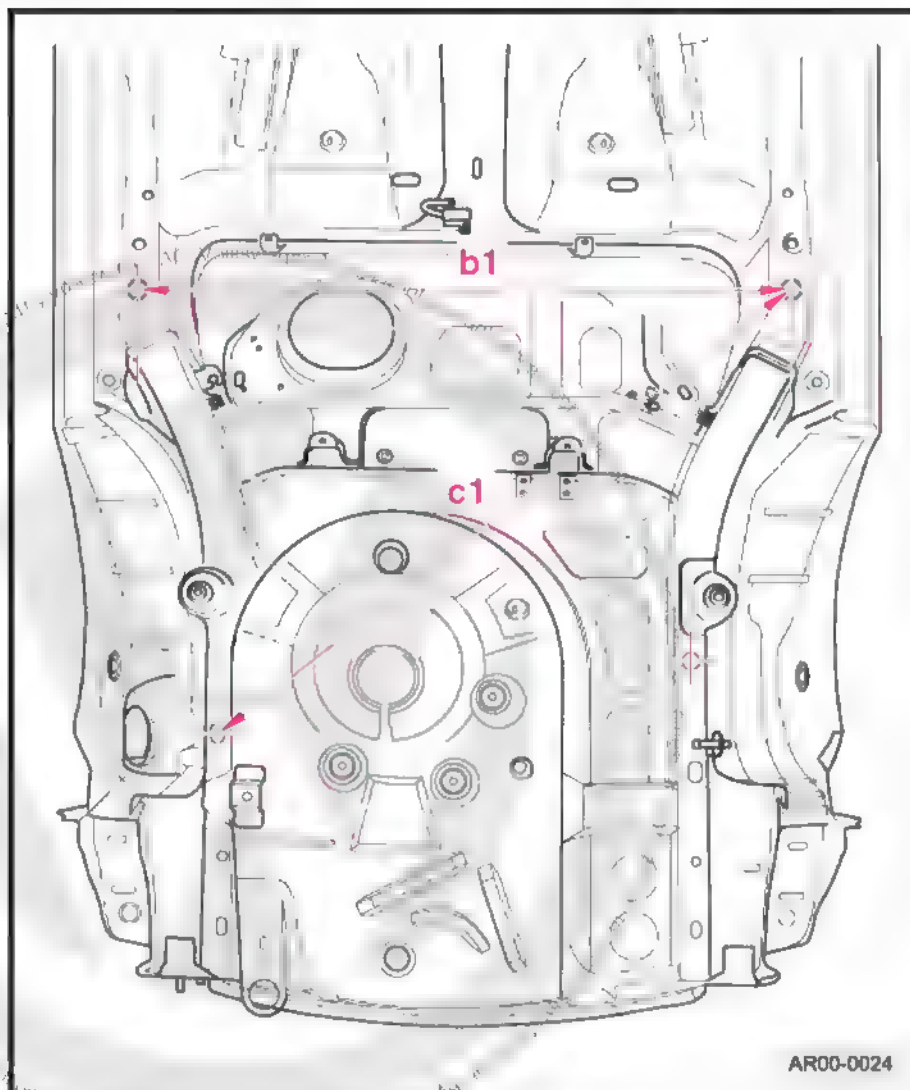
Distance between the right front longitudinal member and the floor master hole on the rear section (diagonal)

$$z = 3204 \pm 1\text{mm}$$

Distance between the left front longitudinal member and master hole of the floor in the rear part (diagonal)

$$a1 = 3145 \pm 1\text{mm}$$





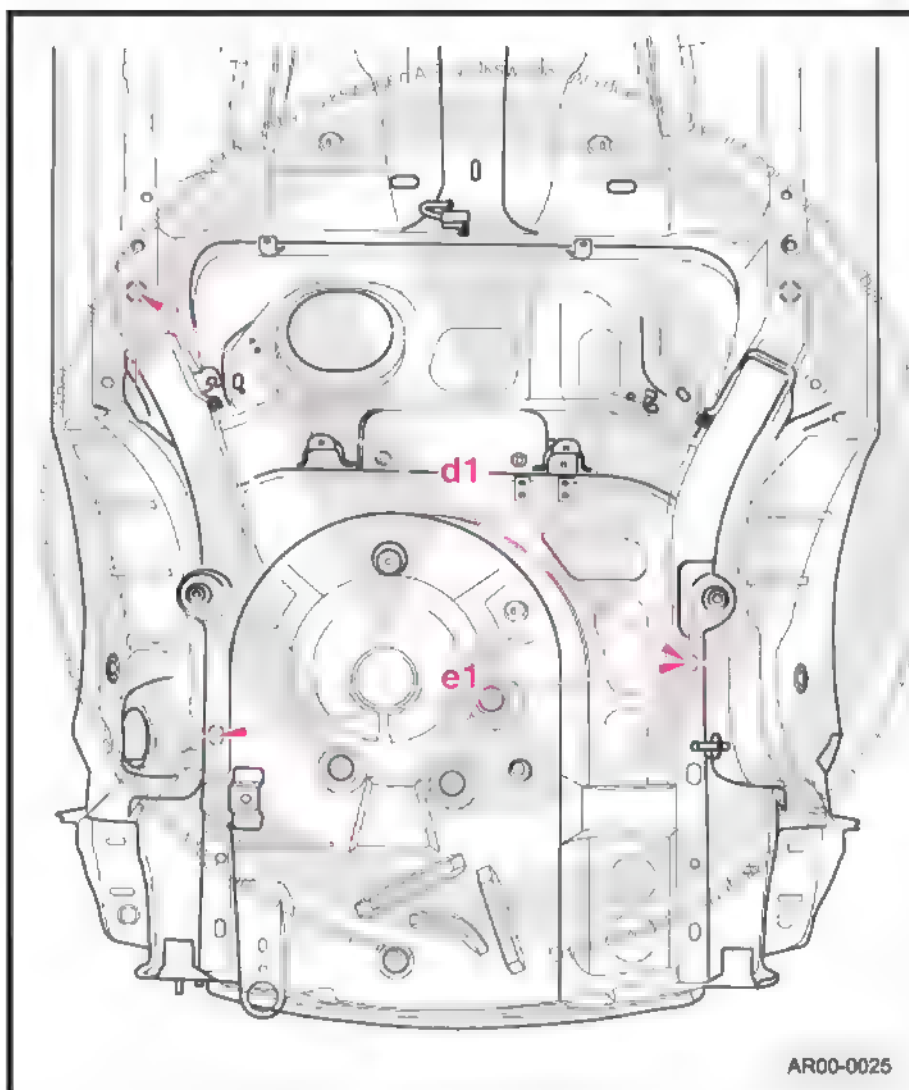
Distance between the master holes of the floor

$b1 = 1220 \pm 1\text{mm}$

Distance between the left rear longitudinal member and the master hole of the floor in the rear part (diagonal)

$c1 = 1353 \pm 1\text{mm}$





Distance between the right rear longitudinal member and the master hole of the floor in the rear part (diagonal)

$d1 = 1316 \pm 1\text{mm}$

Distance between the master holes of the floor

$e1 = 902 \pm 1\text{mm}$



## 7 Alignment platform

### 7.1 Assembly overview



#### Note

- ◆ *RW = Alignment platform*
- ◆ *The position numbers in the figure are identical to the final numbers on the alignment platform.*
- ◆ *The size of the basic set required is always indicated for the alignment platform.*
- ◆ *VAS 5224/1 Alignment platform*
- ◆ *In the following pictures, the right side of the vehicle is shown.*



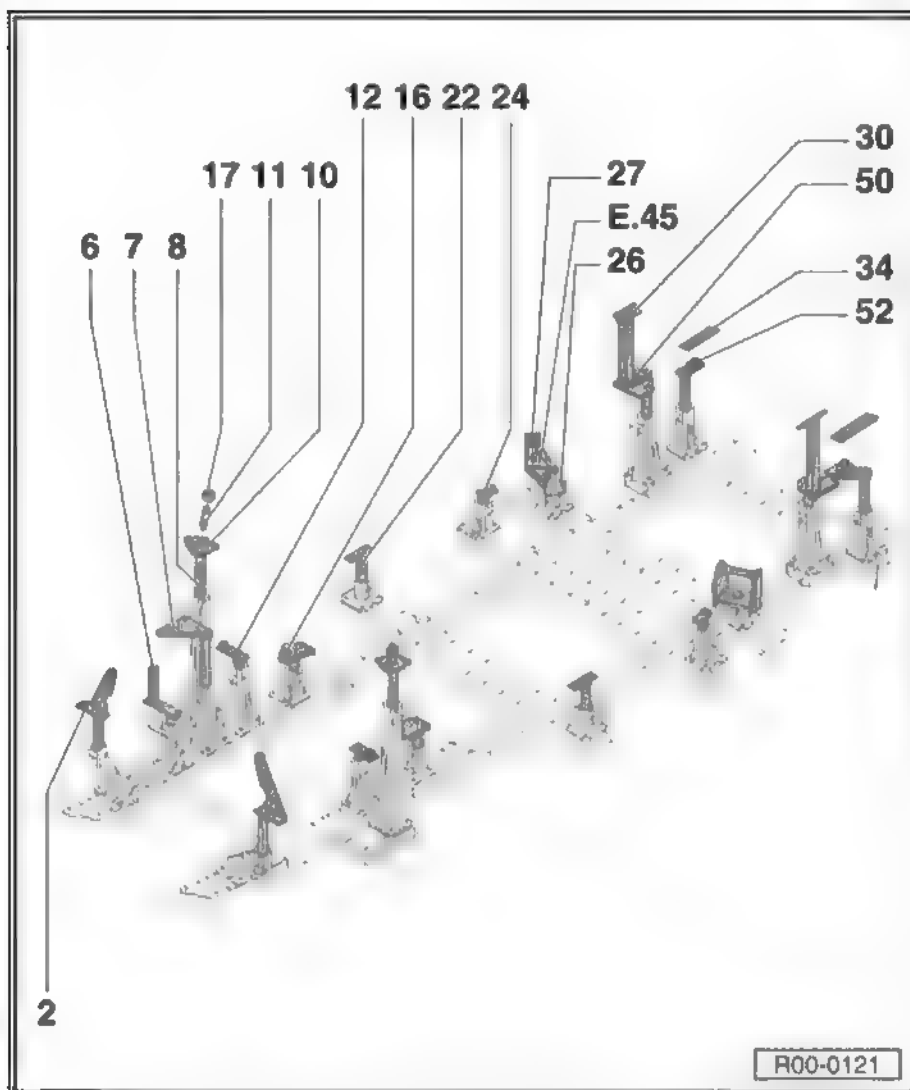
#### DANGER!

*When placing the vehicle on the alignment platform, you must avoid damages to the complementary parts, remove the damaged complementary parts, such as, for example, wheel case protectors, bumper, wheels.*





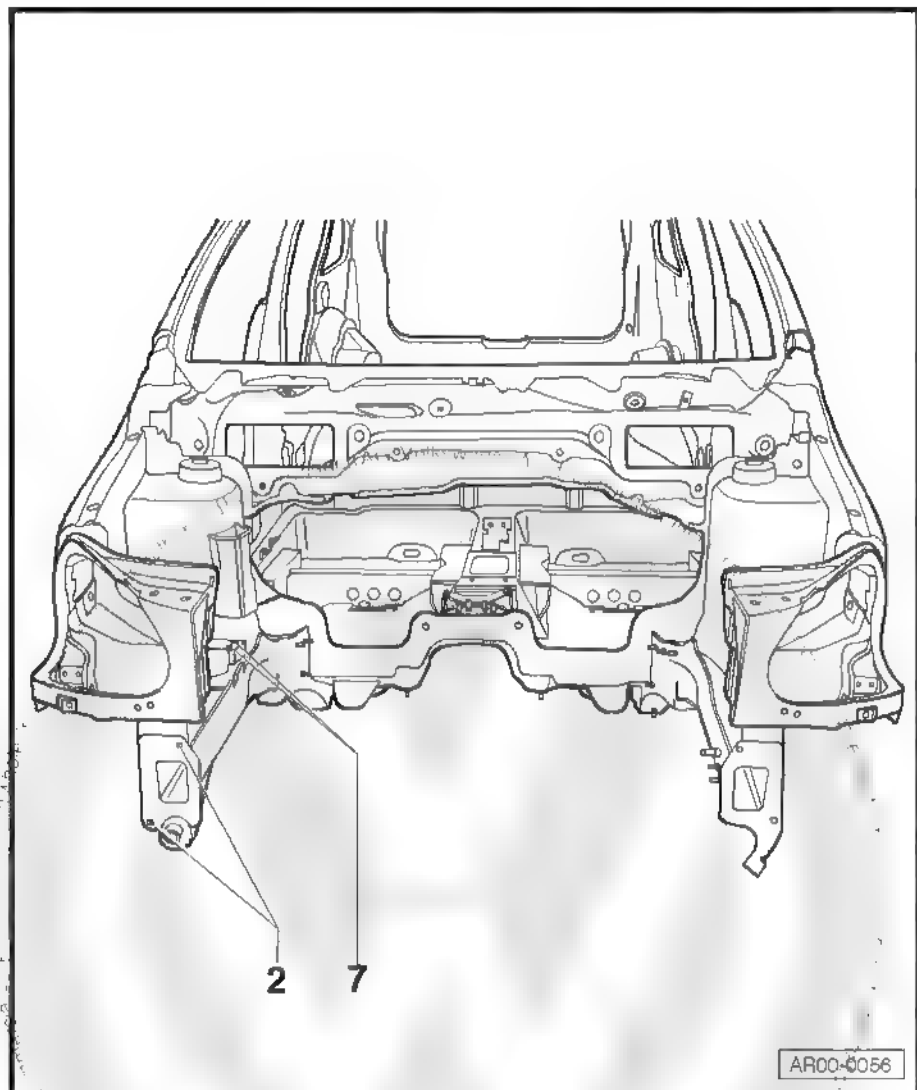
- 2 - MZ 142
- 6 - MZ 140
- 7 - MZ 260
- 8 - MZ 602
- 10 - belongs to pos. 8
- 11 - belongs to pos. 8
- 12 - MZ 260
- 16 - MZ 140
- 17 - belongs to pos. 8
- 22 - MZ 080
- 24 - MZ 140
- 26 - MZ 080
- 27 - belongs with E45 to pos. 26
- 50 - MZ 260 with pos 30
- 52 - MZ 200
- 34 - belongs to pos. 52





## 7.2 General view of the front section alignment platform positions

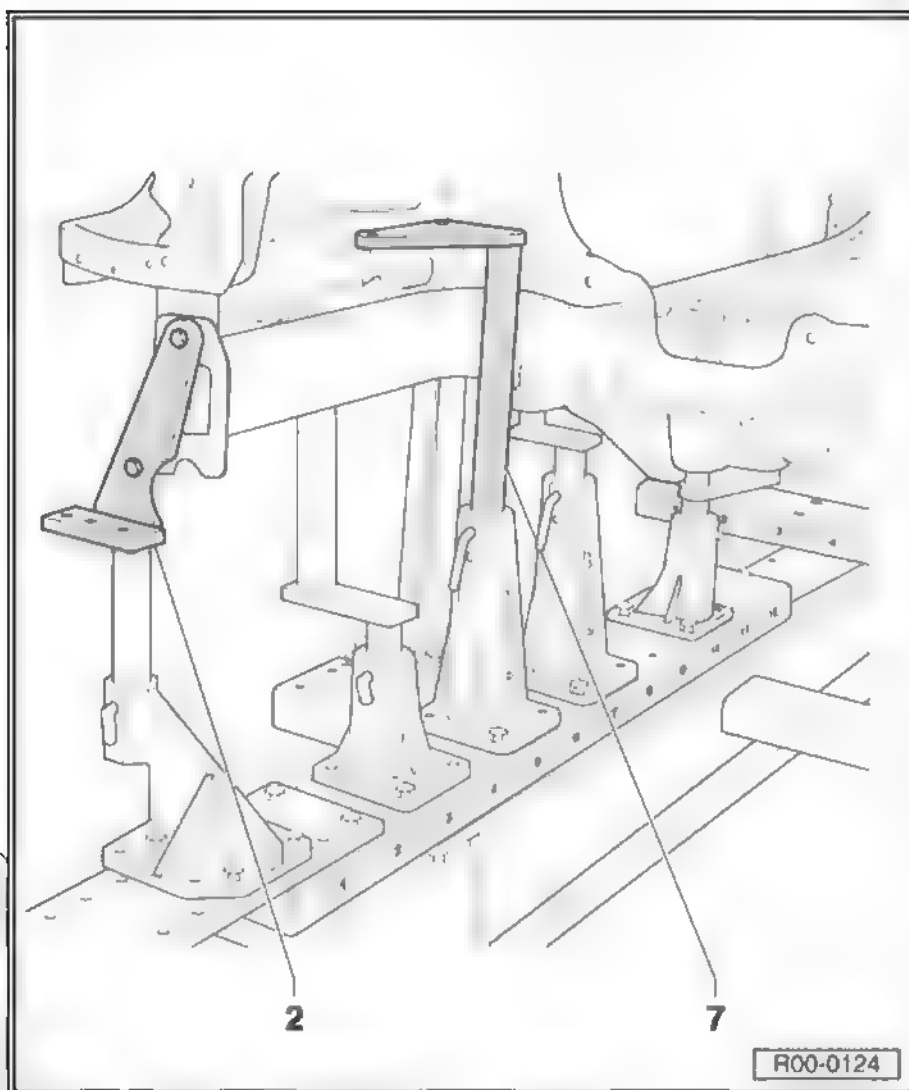
- 2 - Bumper support point
- 7 - Engine cushion support point





2 - Bumper support

7 - Engine cushion support

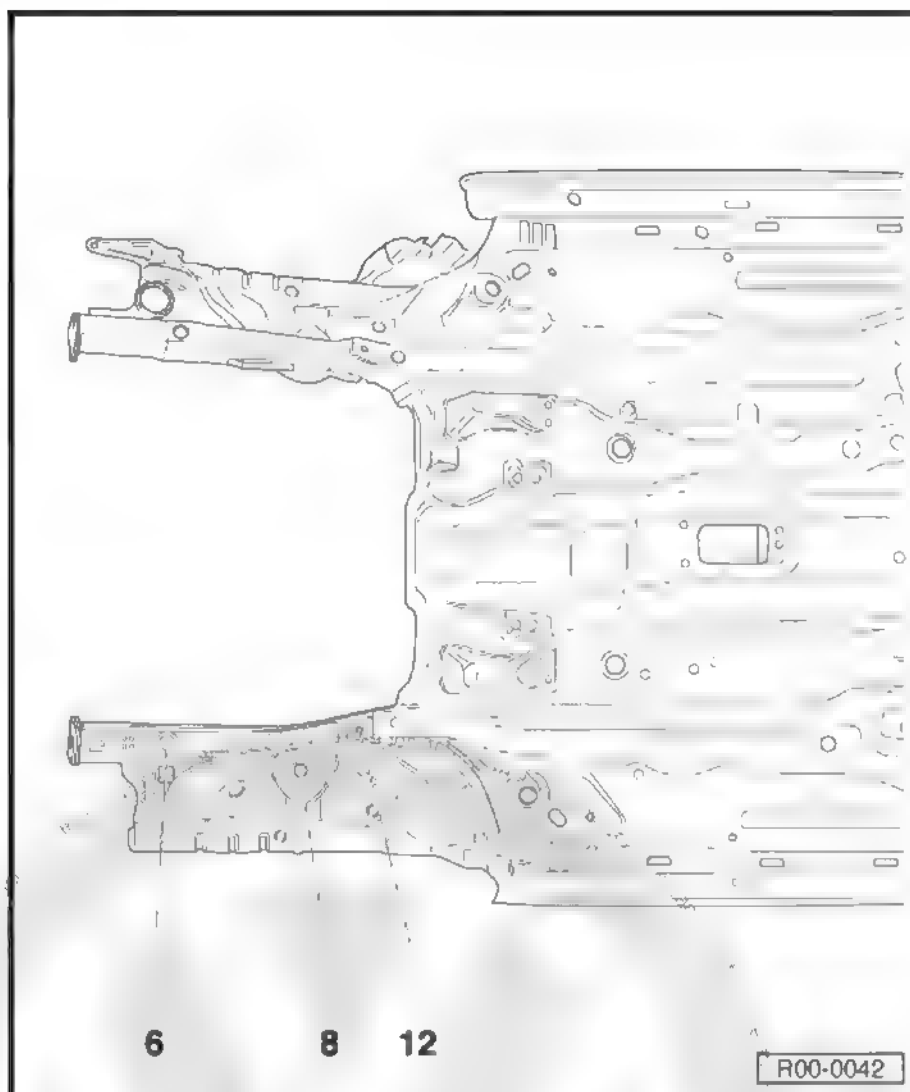




**6 - Front longitudinal member support point**

**8 - Support point for suspension support**

**12 - Support point for the front sub-frame**

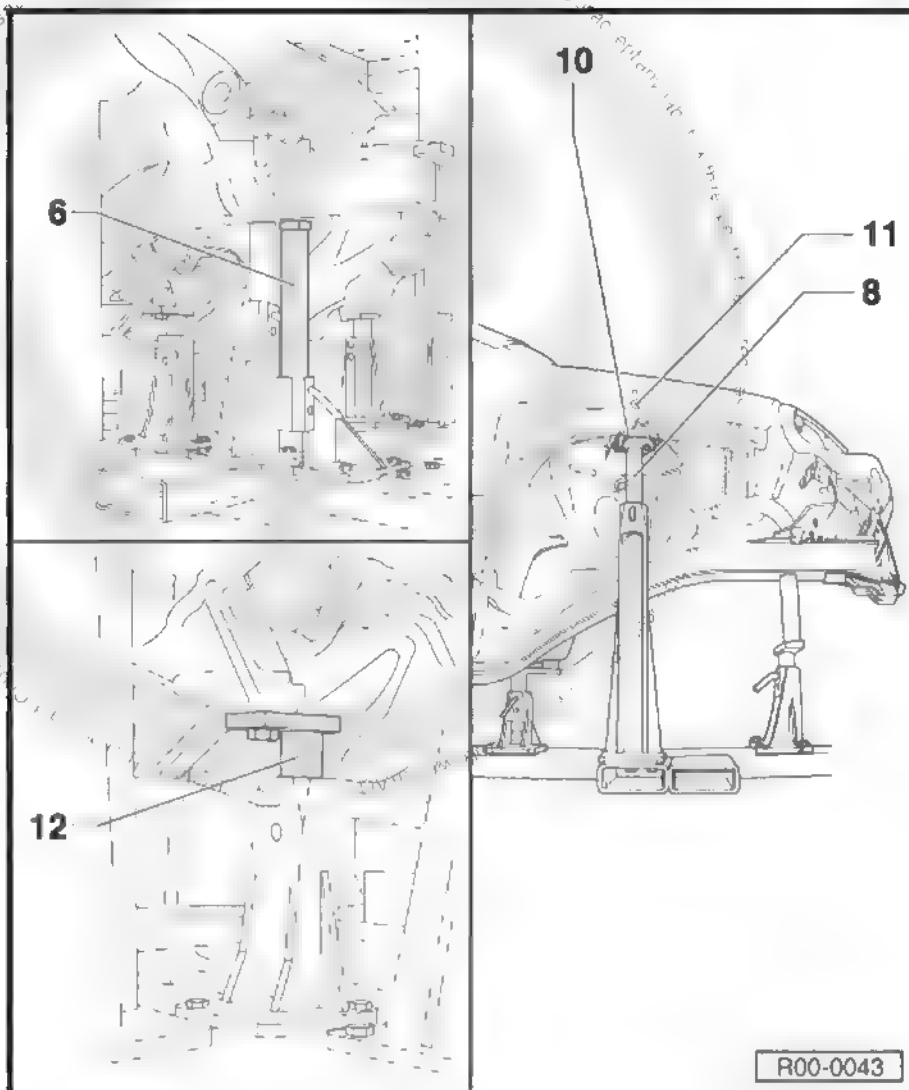




6 - Front longitudinal member support

8 - Support for centralization part -11- and drilling device  
-10- for suspension support

12 - Support for front sub-frame



R00-0043

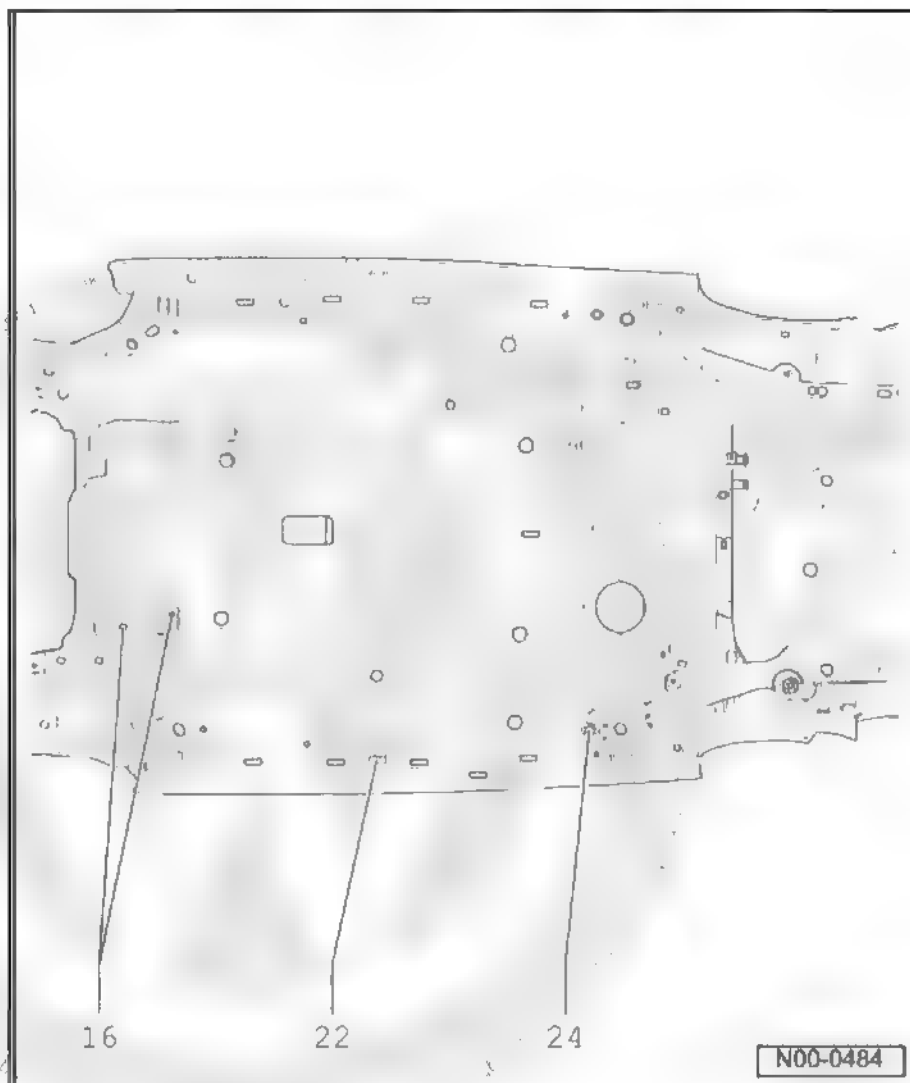


### 7.3 General view of the central section alignment platform positions

16 - Support point for the rear sub-frame

22 - Floor plate support point (lower section)

24 - Support point on the rear longitudinal member



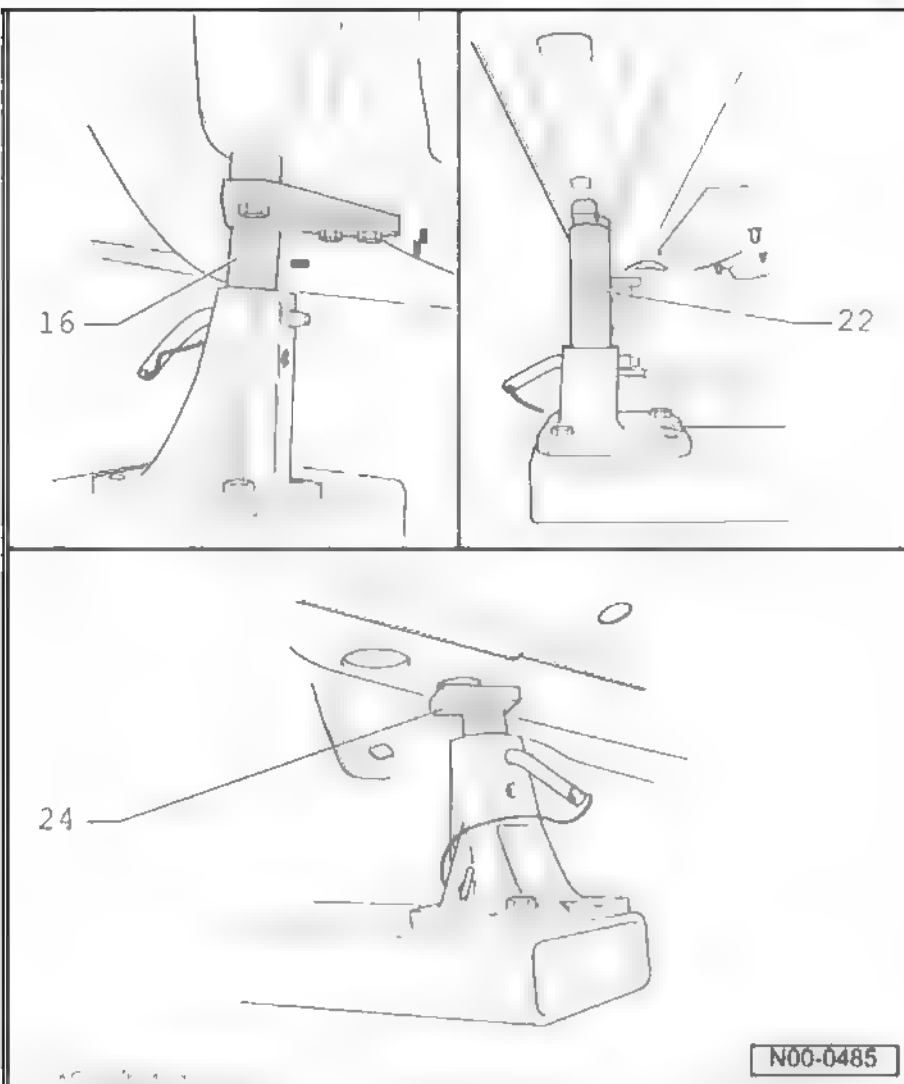




16 - Support for rear sub-frame support

22 - Floor plate support (lower section)

24 - Support for rear longitudinal member drilling



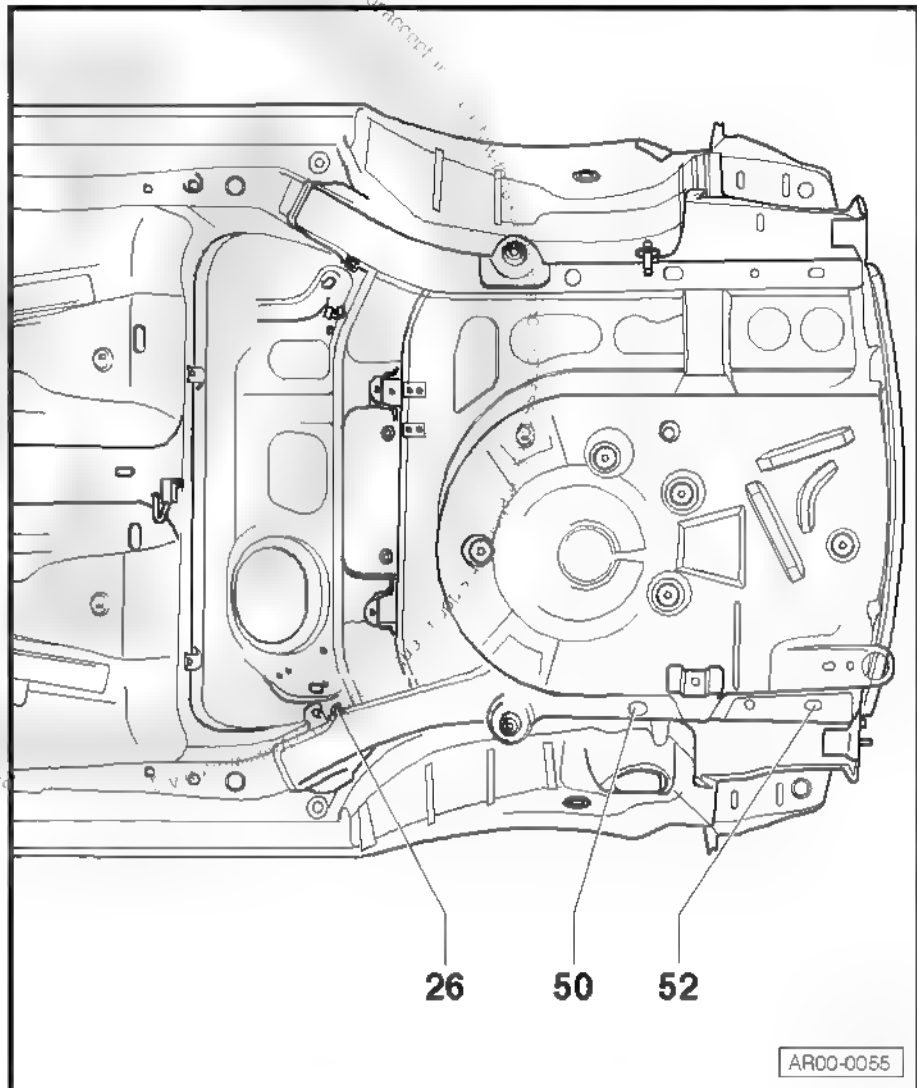


## 7.4 General view of the rear section alignment platform positions

26 - Rear axle fastening support point

50 - Rear longitudinal member support point

52 - Rear longitudinal member support point





26 - Rear axle fastening support (use also pos. -27-)

27 - Rear axle fastening support

- ☐ (only use pos. -E45- with the rear axle removed)

50 - Rear longitudinal member drilling support (use also pos. -30-)

30 - Counter-holder for pos. -50-

52 - Rear longitudinal member drilling support (use also pos. -34-)

34 - Counter-holder for pos. -52-

E45

26

27

30

34

52

50

R00-0122



## 50 – Body - Front part

RO 50 40 55 00

### 1 Engine support (right side) - replace



**DANGER!**

*Follow safety instructions!*

⇒ General Information: Body Repairs, General Body Repairs :  
Safety instructions .

#### 1.1 Tools

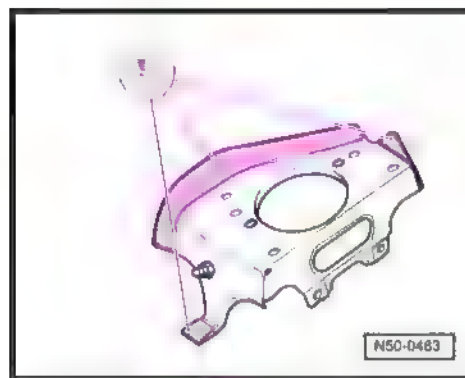
Special tools and workshop equipment required

- ◆ Welding unit (inverter) -VAS 6237-
- ◆ Welding unit (inverter) -VAS 6237 L-
- ◆ Welding unit (inverter) -VAS 6238-
- ◆ Welding unit accessory package (inverter) -VAS 6238/1-
- ◆ Welding unit (inverter) -VAS 6239-
- ◆ Welding unit (inverter) -VAS 6249-



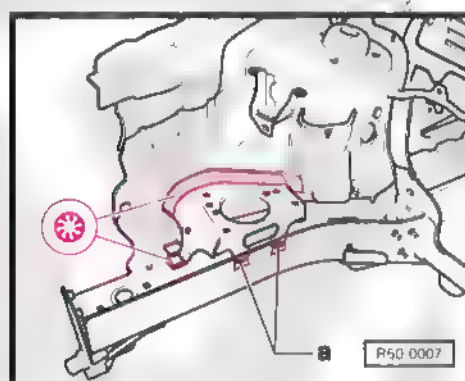


- Perforate the new part on the indicated points.



### 1.3.2 Welding

- Adjust and glue the new part with the vehicle on its wheels or on the alignment platform.
- Weld the engine bracket, gas weld point.
- Weld the welding spots -nd- from outside, gas welding point gas in the hole.





RO 50 53 55 50

## 2 Wheel housing upper longitudinal member - replace



**DANGER!**

*Follow safety instructions!*

⇒ General Information; Body Repairs, General Body Repairs ;  
Safety instructions

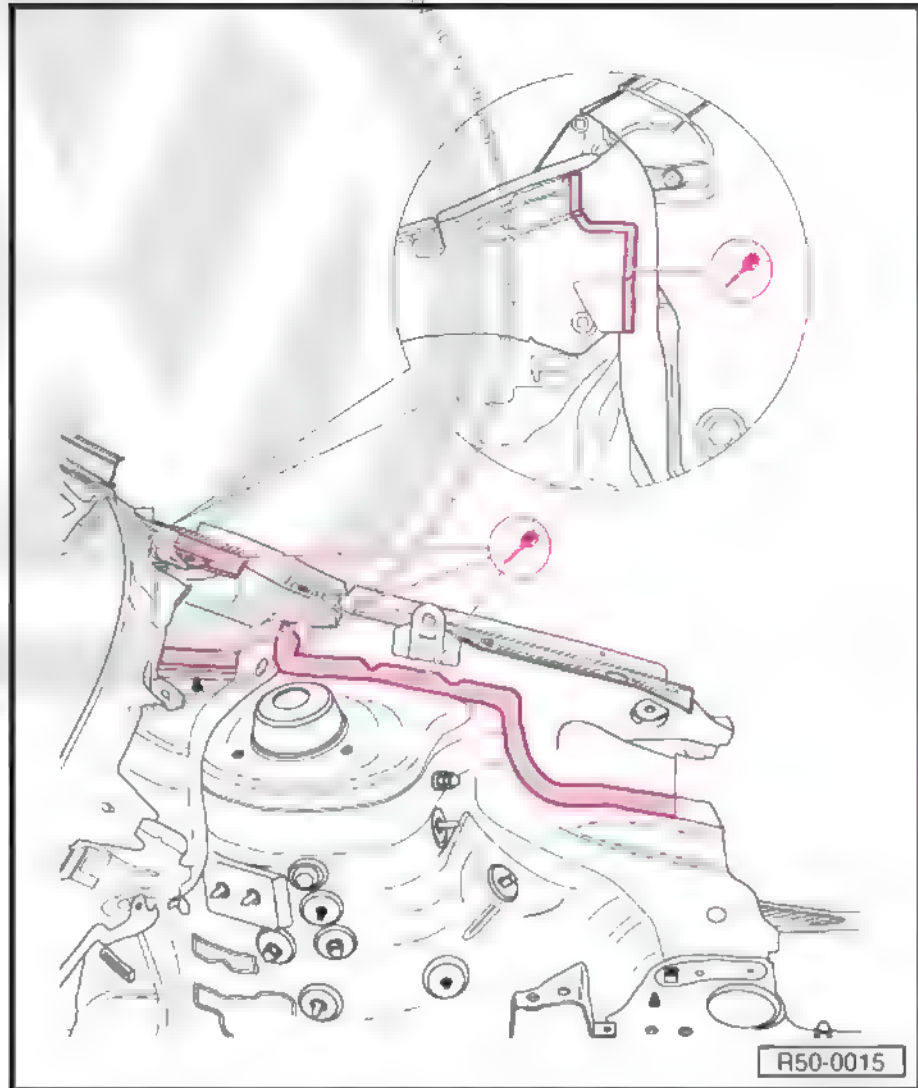
### 2.1 Tools

Special tools and workshop equipment required

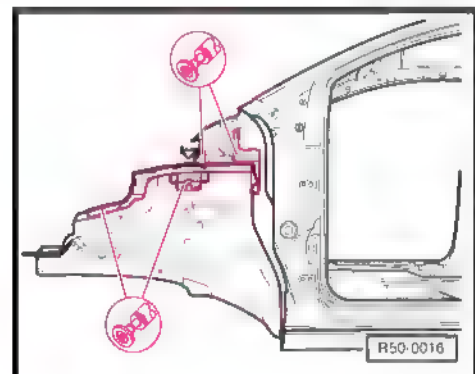
- ◆ Welding unit (inverter) -VAS 6237-
- ◆ Welding unit (inverter) -VAS 6237 L-
- ◆ Welding unit (inverter) -VAS 6238-
- ◆ Welding unit accessory package (inverter) -VAS 6238/1-
- ◆ Welding unit (inverter) -VAS 6239-
- ◆ Welding unit (inverter) -VAS 6249-

### 2.2 Removal

- Wheel housing upper longitudinal member reinforcement removed.



- Undo plate connections of upper longitudinal member with wheel housing and pillar A.
- Remove plate residues.



## 2.3 Installation



### Note

*Use of different types and thickness of steel demands appropriate spot welding equipment.*

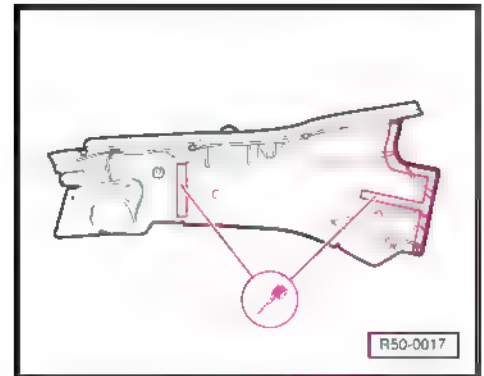




### 2.3.1 Prepare the new part

#### Replacement part

- ◆ Wheel housing upper longitudinal member
- ◆ Foam part/support → [page 3](#)
- ◆ 1K Assembly adhesive -D 190 MKD A3- (1 cartridge)
- Make 8 mm Ø holes in the indicated area.



### 2.3.2 Molded foam parts

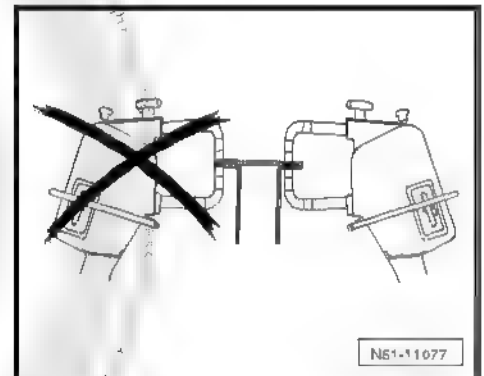
Follow repair instructions → [page 3](#).

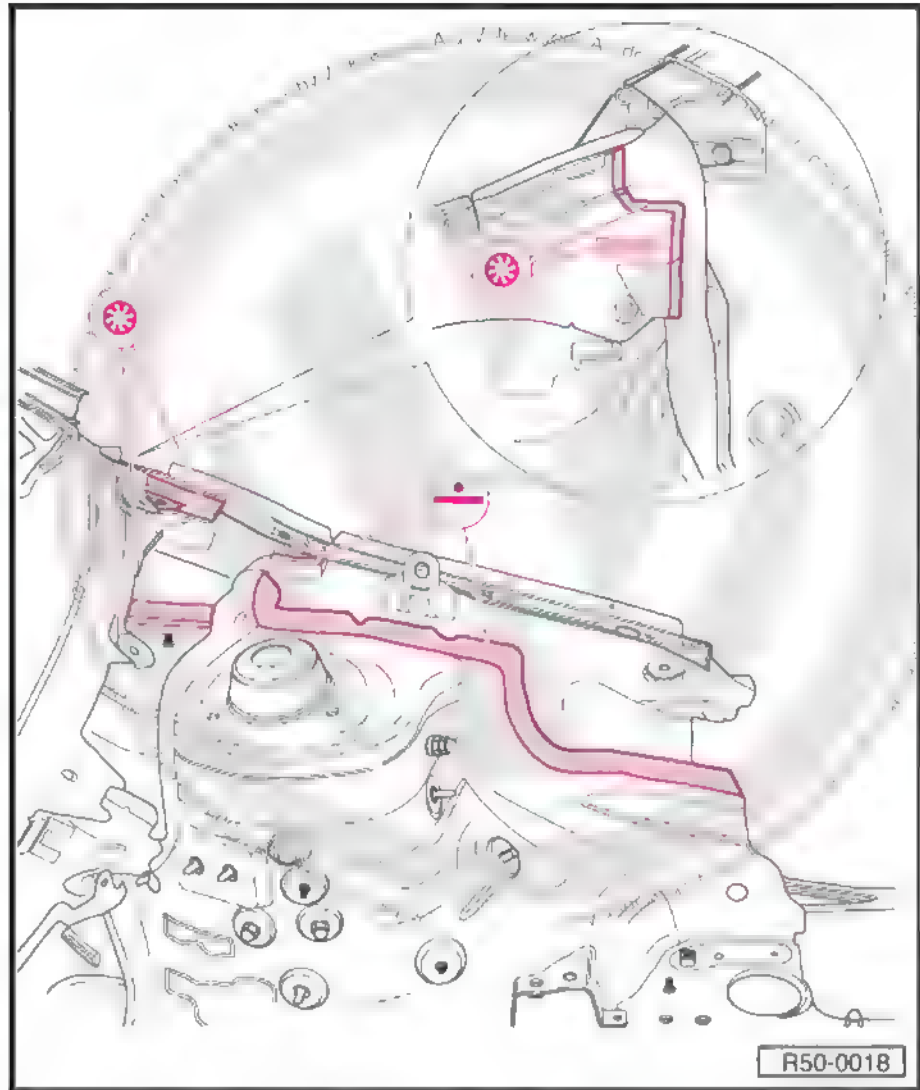
### 2.3.3 Welding



#### Note

- ◆ *Welding spots RP - spot seam (one row) shall be performed in the center of the area indicated to welding.*
- ◆ *The rigidity of the set is determined by the weld disposition.*
- Adjust the new part with the vehicle supported by its wheels or on the alignment platform.
- Check the adjustment with other components.





- Weld wheel housing upper longitudinal member, RP - spot seam (one row) and SG - hole fulfillment seam.
- Weld upper longitudinal member reinforcement ⇒ [page 58](#) .



RO 50 60 55 00

### 3 Headlight housing - replace



**DANGER!**

*Follow safety instructions!*

⇒ General Information; Body Repairs, General Body Repairs ;  
Safety instructions .

#### 3.1 Tools

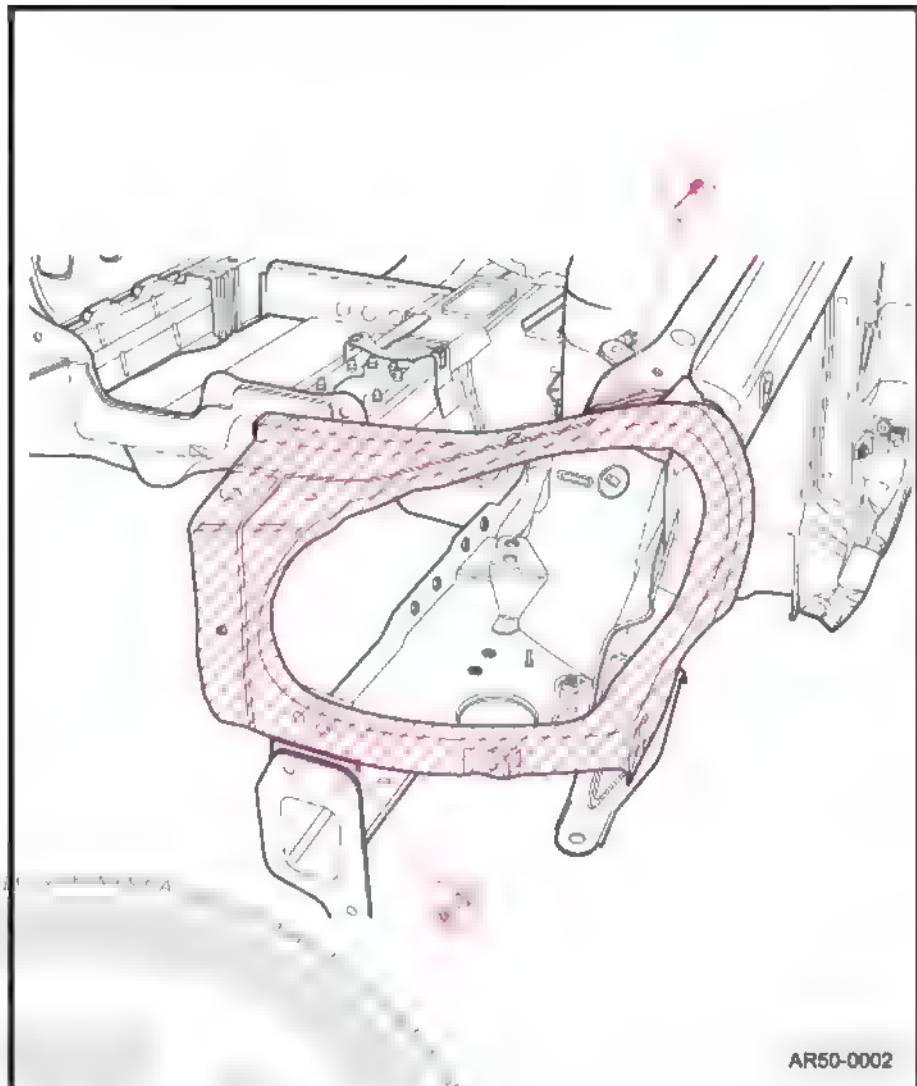
Special tools and workshop equipment required

- ◆ Welding unit (inverter) -VAS 6237-
- ◆ Welding unit (inverter) -VAS 6237 L-
- ◆ Welding unit (inverter) -VAS 6238-
- ◆ Welding unit accessory package (inverter) -VAS 6238/1-
- ◆ Welding unit (inverter) -VAS 6239-
- ◆ Welding unit (inverter) -VAS 6249-

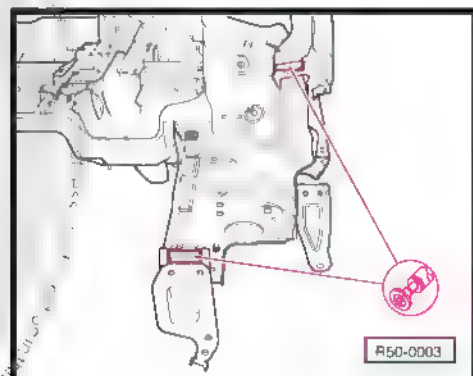




## 3.2 Removal



- Release the original union.
- Remove the remaining parts.



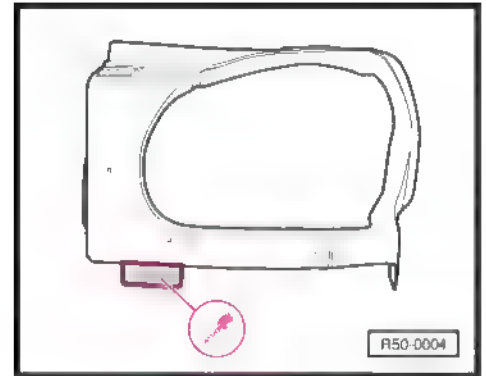


### 3.3 Installation

#### 3.3.1 Prepare the new part

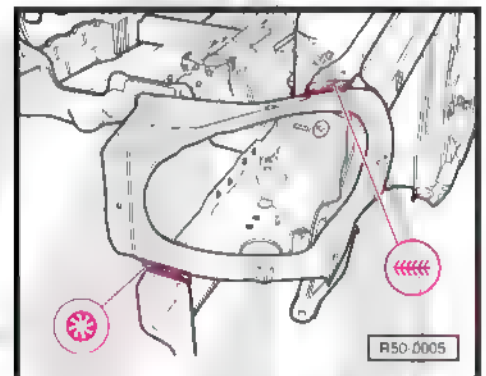
Replacement part

- ◆ Headlight housing
- Drill holes for gas weld points,  $\varnothing$  8 mm.



#### 3.3.2 Welding

- Adjust and glue the new part with the vehicle on its wheels or on the alignment platform.
- Check adjustment with complementary parts.
- Weld the new part, gas weld point and continuous gas weld seam.





RO 50 72 55 00

## 4 Wheel housing upper longitudinal member reinforcement - replace



**DANGER!**

*Follow safety instructions!*

*Since gases extremely harmful to people's health and the environment are created when separating with spark-generating equipment and tools or when tin-plating in areas containing foam, such procedures must always be avoided when welding.*

⇒ General Information: Body Repairs, General Body Repairs ;  
Safety instructions

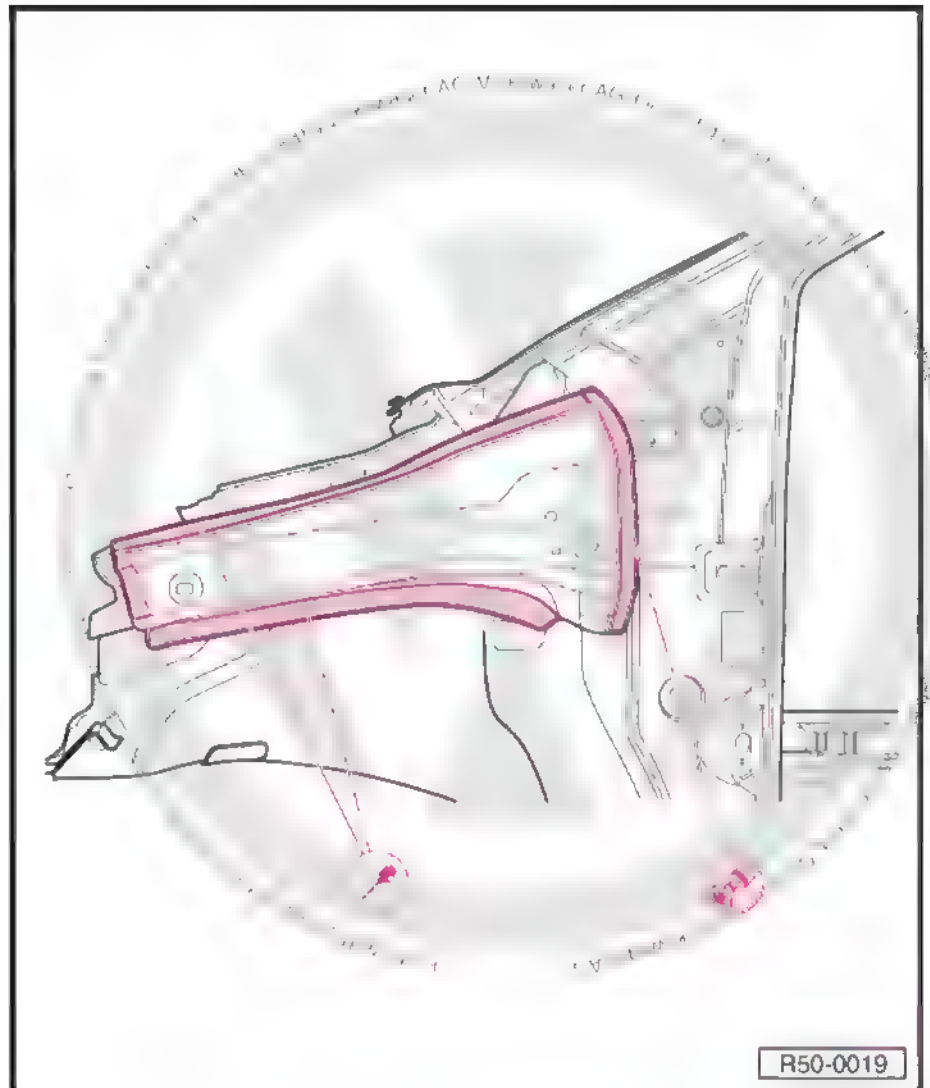
### 4.1 Tools

Special tools and workshop equipment required

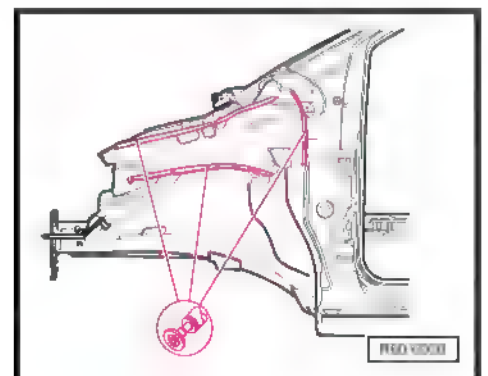
- ◆ Welding unit (inverter) -VAS 6237-
- ◆ Welding unit (inverter) -VAS 6237 L-
- ◆ Welding unit (inverter) -VAS 6238-
- ◆ Welding unit accessory package (inverter) -VAS 6238/1-
- ◆ Welding unit (inverter) -VAS 6239-
- ◆ Welding unit (inverter) -VAS 6249-



## 4.2 Removal



- Undo plate connections.
- Remove plate residues.





## 4.3 Installation



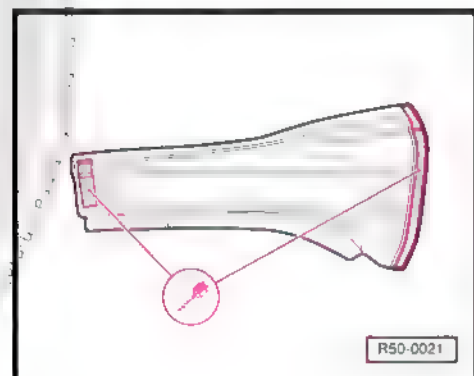
### Note

*Use of different types and thickness of steel demands appropriate spot welding equipment.*

### 4.3.1 Prepare the new part

#### Replacement part

- ◆ Wheel case longitudinal member upper part
- ◆ Wheel housing upper longitudinal member reinforcement
- ◆ Molded foam part
- Make 8 mm Ø holes in the indicated area.



### 4.3.2 Molded foam parts

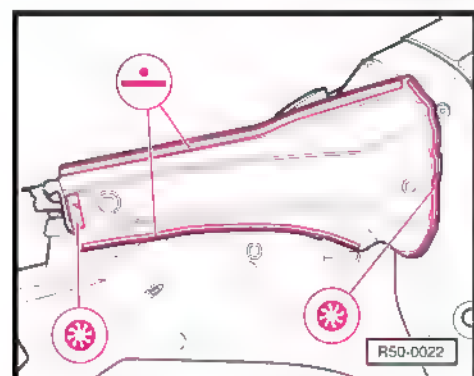
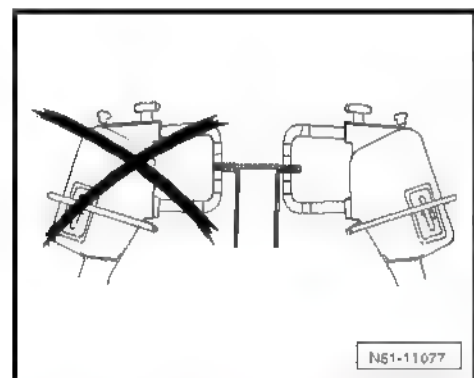
Follow repair instructions [page 3](#).

### 4.3.3 Welding



### Note

- ◆ *Welding spots RP - spot seam (one row) shall be performed in the center of the area indicated to welding.*
- ◆ *The rigidity of the set is determined by the weld disposition.*
- Adjust the new part with the vehicle supported by its wheels or on the alignment platform.
- Check adjustment with complementary parts.
- Weld upper longitudinal member reinforcement, RP - spot seam (one row).
- Weld upper longitudinal member reinforcement with pillar A, SG - hole fulfillment seam.







RO 50 74 55 50

## 5 Front wheel housing - replace



**DANGER!**

*Follow safety instructions!*

⇒ General Information; Body Repairs, General Body Repairs ;  
Safety instructions

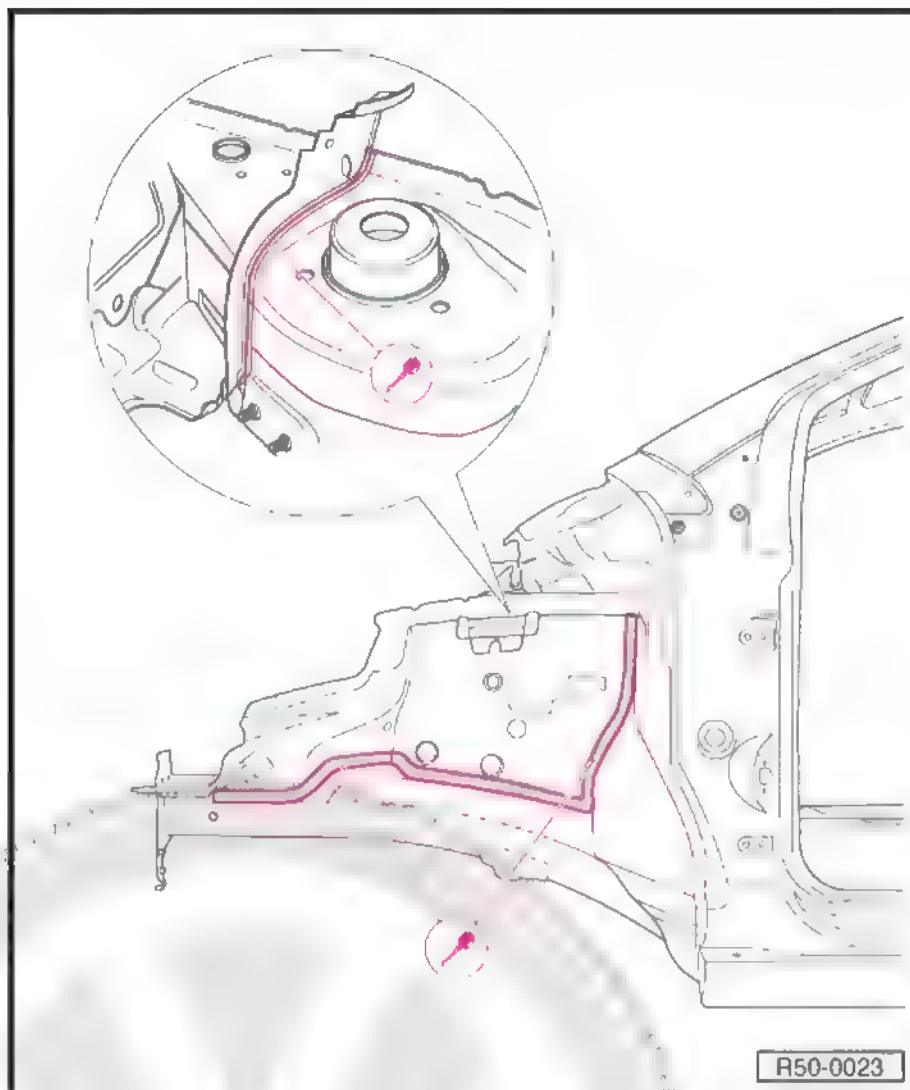
### 5.1 Tools

Special tools and workshop equipment required

- ◆ Welding unit (inverter) -VAS 6237-
- ◆ Welding unit (inverter) -VAS 6237 L-
- ◆ Welding unit (inverter) -VAS 6238-
- ◆ Welding unit accessory package (inverter) -VAS 6238/1-
- ◆ Welding unit (inverter) -VAS 6239-
- ◆ Welding unit (inverter) -VAS 6249-

### 5.2 Removal

- Removed wheel housing upper longitudinal member



- Undo plate connections.
- Drill water deflector panel.
- Remove plate residues.

### 5.3 Installation



#### Note

*Use of different types and thickness of steel demands appropriate spot welding equipment.*

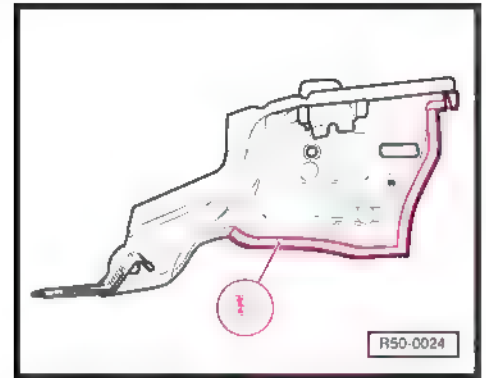
#### 5.3.1 Prepare the new part

Replacement part

- ◆ Front wheel housing



- Drill the new part.

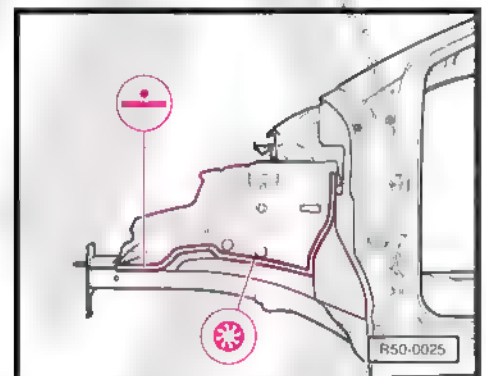
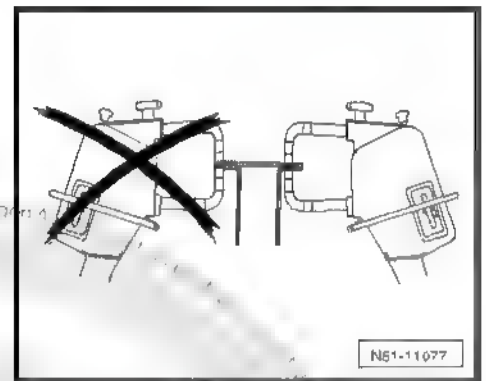


### 5.3.2 Welding



#### Note

- ◆ *Welding spots RP - spot seam (one row) shall be performed in the center of the area indicated to welding.*
- ◆ *The rigidity of the set is determined by the weld disposition,*
- Adjust the new part with the vehicle supported by its wheels or on the alignment platform.
- Check the adjustment with other components.
- Weld wheel housing in the lower longitudinal member, RP - spot seam (one row).
- Re-establish other connections, SG - hole fulfillment seam.



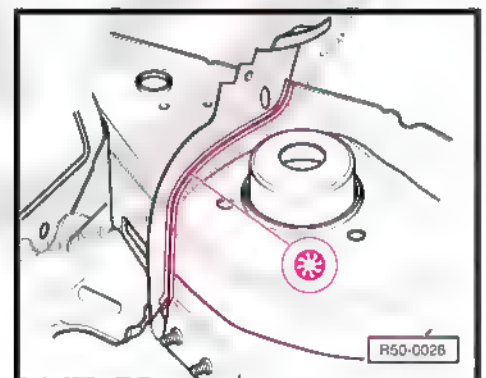
- Weld the core plate for the water reservoir, SG - hole fulfillment seam.



#### Note

*Pos.-17- from the Alignment platform -VAS 5224- can be used for checking the dimension -nd-.*

- Weld the wing connecting plate > [page 50](#) .
- Weld the longitudinal member to the upper wheel housing part > [page 58](#) .





RO 50 75 55 52

## 6 Front wheel housing (partial part) - replace



**DANGER!**

*Follow safety instructions!*

Safety instructions ⇒ General Information; Body Repairs, General  
Body Repairs ; Safety instructions .

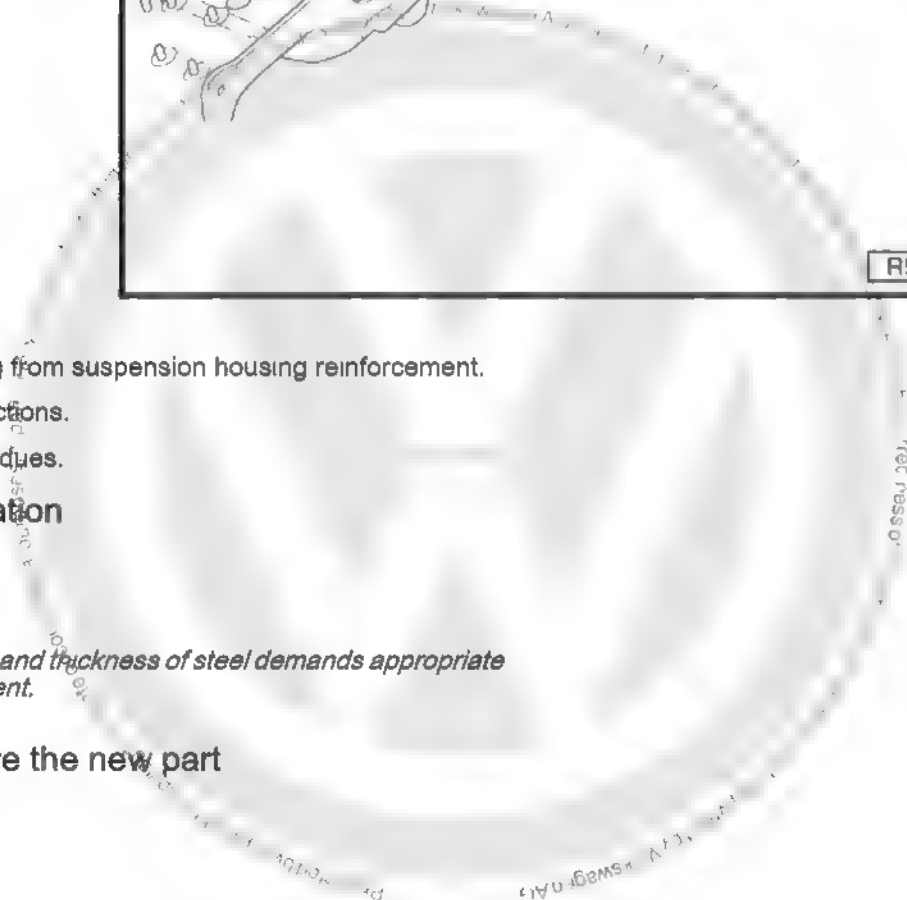
### 6.1 Tools

Special tools and workshop equipment required

- ◆ Welding unit (inverter) -VAS 6237-
- ◆ Welding unit (inverter) -VAS 6237 L-
- ◆ Welding unit (inverter) -VAS 6238-
- ◆ Welding unit accessory package (inverter) -VAS 6238/1-
- ◆ Welding unit (inverter) -VAS 6239-
- ◆ Welding unit (inverter) -VAS 6249-

### 6.2 Removal

- Wheel housing upper longitudinal member removed.
- Upper longitudinal member reinforcement removed.



- ### 6.3 Installation

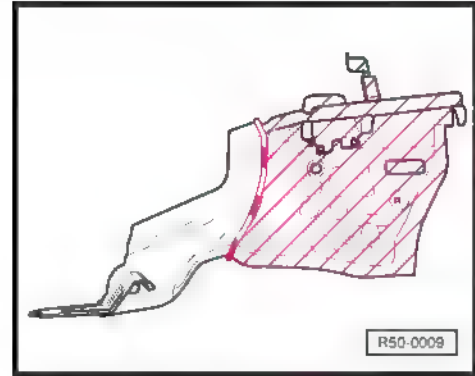


### 6.3.1 Prepare the new part

- ◆ Wheel case



- Transfer wheel housing cut to the new part, leave 10 mm to perform overlapping, eliminating the shadowed area from the new part.

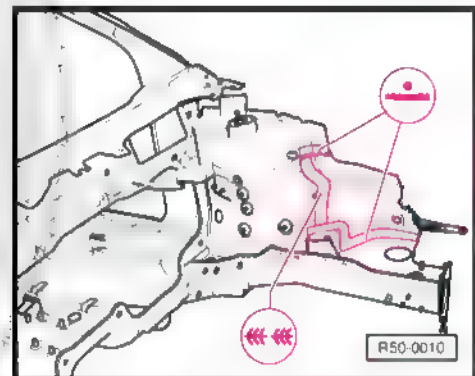
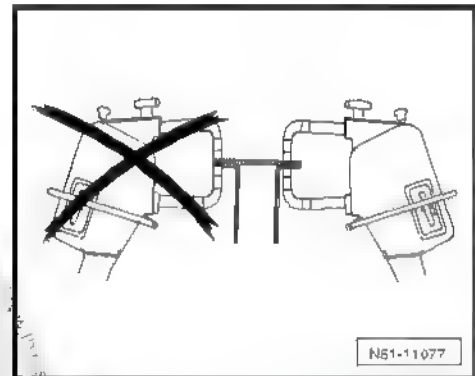


### 6.3.2 Welding



#### Note

- ◆ *Welding spots RP - spot seam (one row) shall be performed in the center of the area indicated to welding.*
- ◆ *The rigidity of the set is determined by the weld disposition.*
- Adjust the new part with the vehicle supported by its wheels or on the alignment platform.
- Check the adjustment with other parts.
- Weld wheel housing, RP - spot seam (one row).
- Overlap weld on both sides of the lower separation cut, SG - seam (discontinuous).





RO 50 79 55 50

## 7 Front longitudinal member - replace



**DANGER!**

*Follow safety instructions!*

Safety instructions ⇒ General Information, Body Repairs, General  
Body Repairs ; Safety instructions

### 7.1 Tools

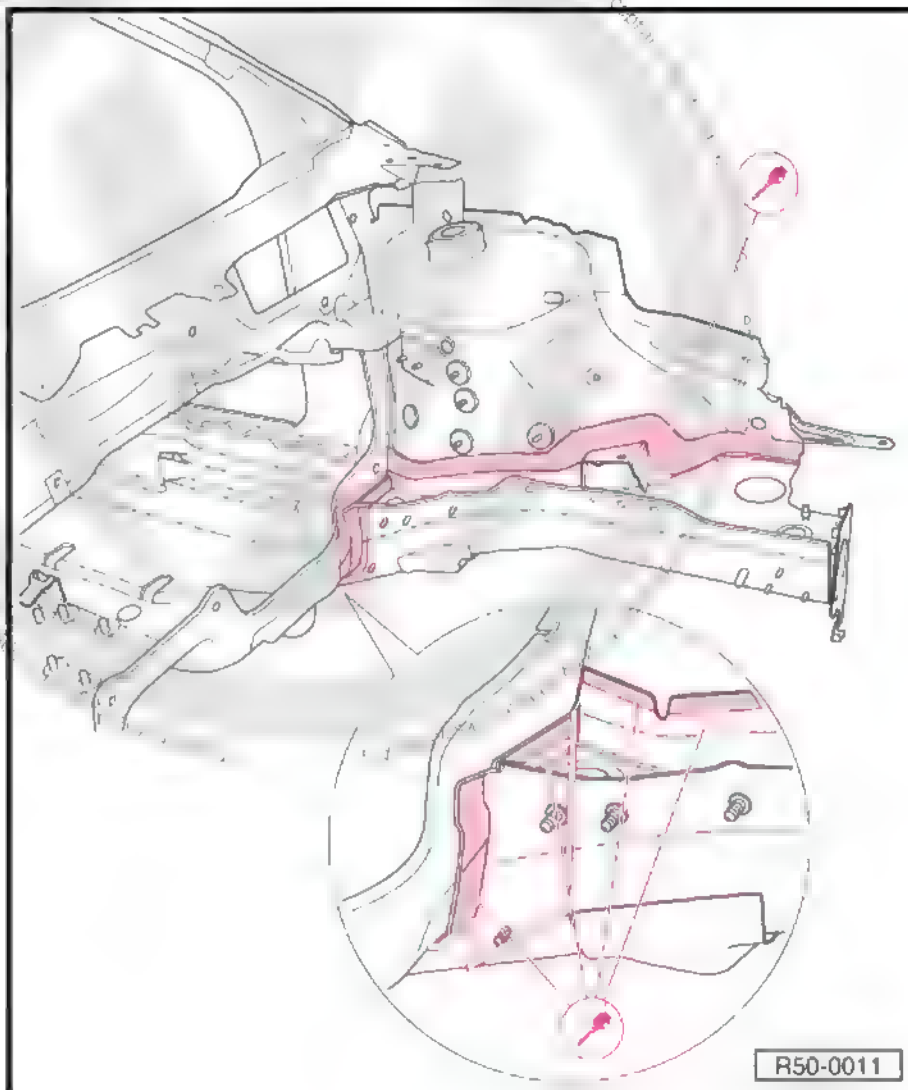
Special tools and workshop equipment required

- ◆ Welding unit (inverter) -VAS 6237-
- ◆ Welding unit (inverter) -VAS 6237 L-
- ◆ Welding unit (inverter) -VAS 6238-
- ◆ Welding unit accessory package (inverter) -VAS 6238/1-
- ◆ Welding unit (inverter) -VAS 6239-
- ◆ Welding unit (inverter) -VAS 6249-





## 7.2 Removal



- Cut the longitudinal member.
- Undo plate connections.
- Remove plate residues.

## 7.3 Installation



### Note

*Use of different types and thickness of steel demands appropriate spot welding equipment.*

### 7.3.1 Prepare the new part

Replacement part

- ◆ Front longitudinal member
- ◆ Front bumper support
- Transfer wheel housing cut for the new part.



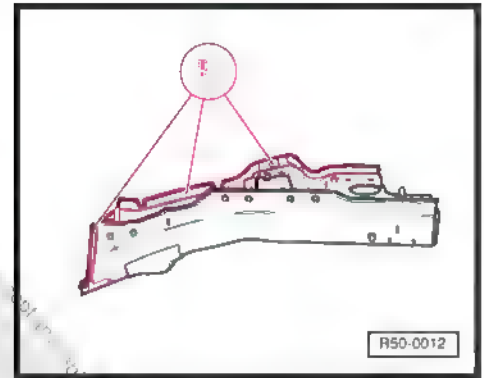


- Drill the new part with holes for SG seam, Ø 8 mm.



**Note**

- ◆ *Observe the support reinforcement (fuel pipe guide channel) on the longitudinal member in the right side.*
- ◆ *Depending on the damage, place the cut in front or behind the reinforcement.*

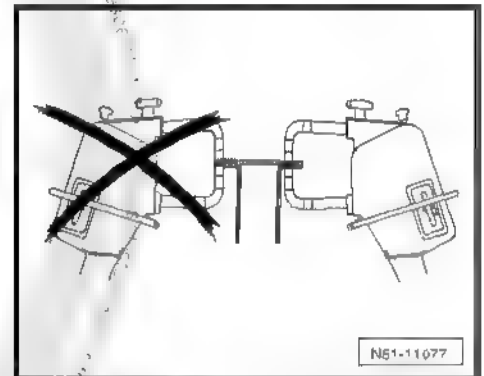


### 7.3.2 Welding

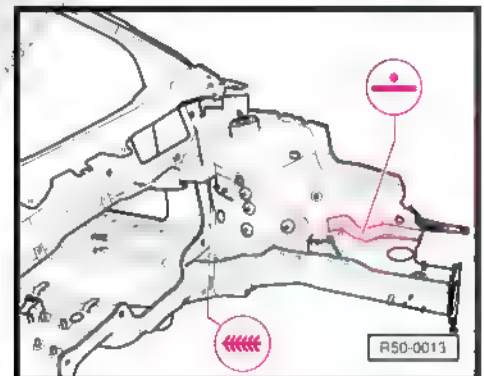


**Note**

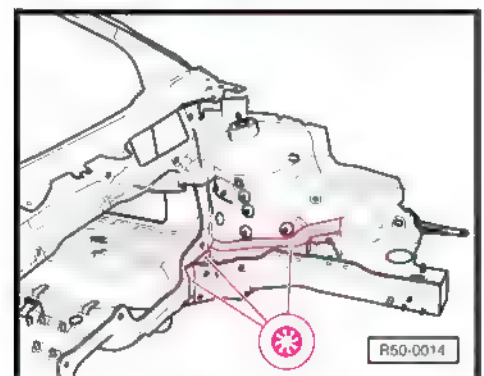
- ◆ *Welding spots RP - spot seam (one row) shall be performed in the center of the area indicated to welding.*
- ◆ *The rigidity of the set is determined by the weld disposition.*
- Adjust and glue the new part with the vehicle on its wheels or on the alignment platform.



- Weld cut; SG - continuous seam.
- Point other connections, RP - spot seam (one row).



- Weld longitudinal member, SG - continuous seam.
- Weld longitudinal member, SG - hole fulfillment seam.
- Weld front bumper support ⇒ [page 74](#) .





RO 50 79 55 52

## 8 Front longitudinal member (partial part) - replace



**DANGER!**

*Follow safety instructions!*

⇒ General Information; Body Repairs, General Body Repairs ;  
Safety instructions

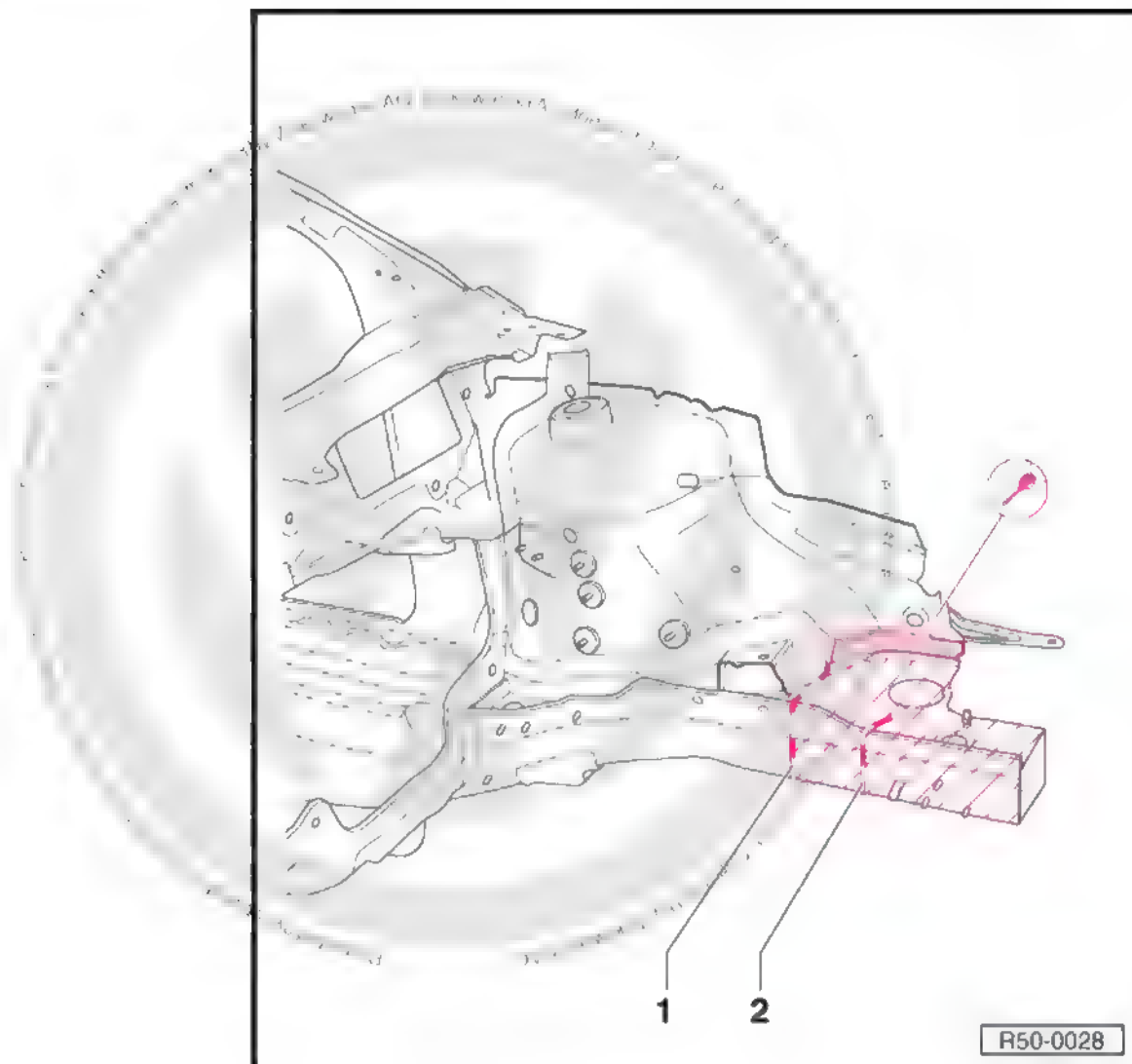
### 8.1 Tools

Special tools and workshop equipment required

- ◆ Welding unit (inverter) -VAS 6237-
- ◆ Welding unit (inverter) -VAS 6237 L-
- ◆ Welding unit (inverter) -VAS 6238-
- ◆ Welding unit accessory package (inverter) -VAS 6238/1-
- ◆ Welding unit (inverter) -VAS 6239-
- ◆ Welding unit (inverter) -VAS 6249-



## 8.2 Removal



- Undo plate connections.



### Note

- ◆ Depending on damage, determine the cut, such as cut -1- or -2-.
- ◆ Cut in a straight line.

- Remove plate residues.

## 8.3 Installation



### Note

*Use of different types and thickness of steel demands appropriate spot welding equipment.*



### 8.3.1 Prepare the new part

#### Replacement part

- ◆ Longitudinal member
- ◆ Cover plate
- ◆ Front bumper support
- Transfer longitudinal member cut for the new part and cut

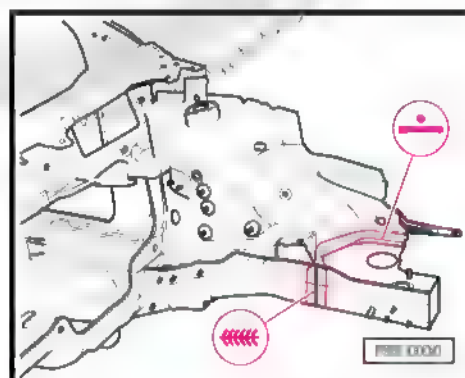
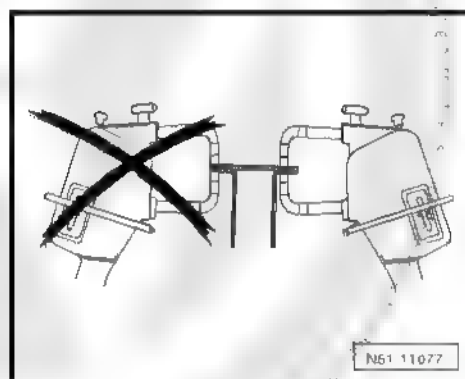


### 8.3.2 Welding



#### Note

- ◆ *Welding spots RP - spot seam (one row) shall be performed in the center of the area indicated to welding.*
- ◆ *The rigidity of the set is determined by the weld disposition.*
- Adjust the new part with the vehicle supported by its wheels or on the alignment platform.
- Butt weld the connection, SG - continuous seam.



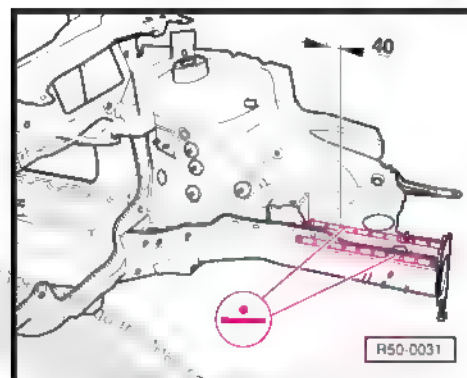


- Weld plate with wheel housing, RP - spot seam (one row).
- Weld front bumper support → [page 74](#) .



Note

*If longitudinal member and cover plate are cut as one piece, then longitudinal member cuts and the cover plate must be placed 50 mm apart and the welding spots must be parallel. The indicated distance of -40 mm- must be observed.*





RO 50 80 55 00

## 9 Front bumper support - replace



**DANGER!**

*Follow safety instructions!*

⇒ General Information; Body Repairs, General Body Repairs ;  
Safety instructions

### 9.1 Tools

Special tools and workshop equipment required

- ◆ Welding unit (inverter) -VAS 6237-
- ◆ Welding unit (inverter) -VAS 6237 L-
- ◆ Welding unit (inverter) -VAS 6238-
- ◆ Welding unit accessory package (inverter) -VAS 6238/1-
- ◆ Welding unit (inverter) -VAS 6239-
- ◆ Welding unit (inverter) -VAS 6249-

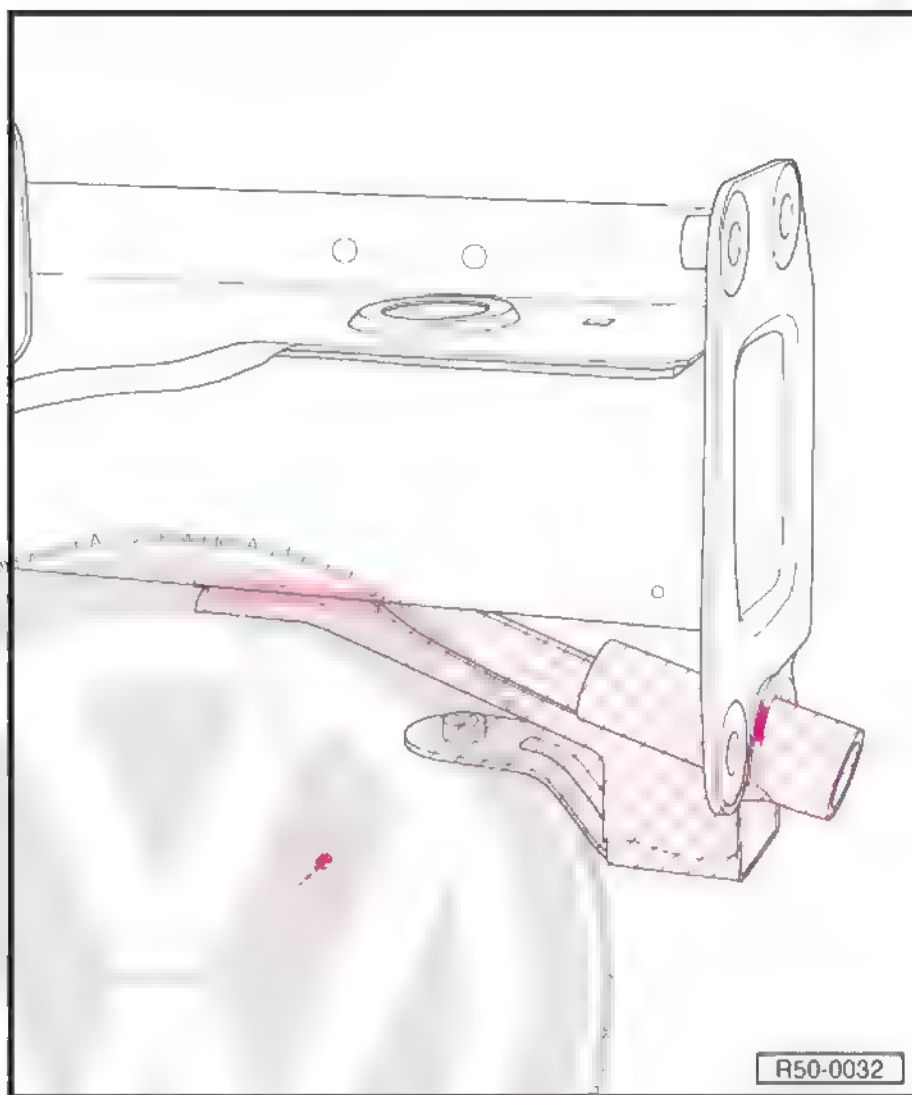
### 9.2 Removal

Headlight housing (Fox) removed.

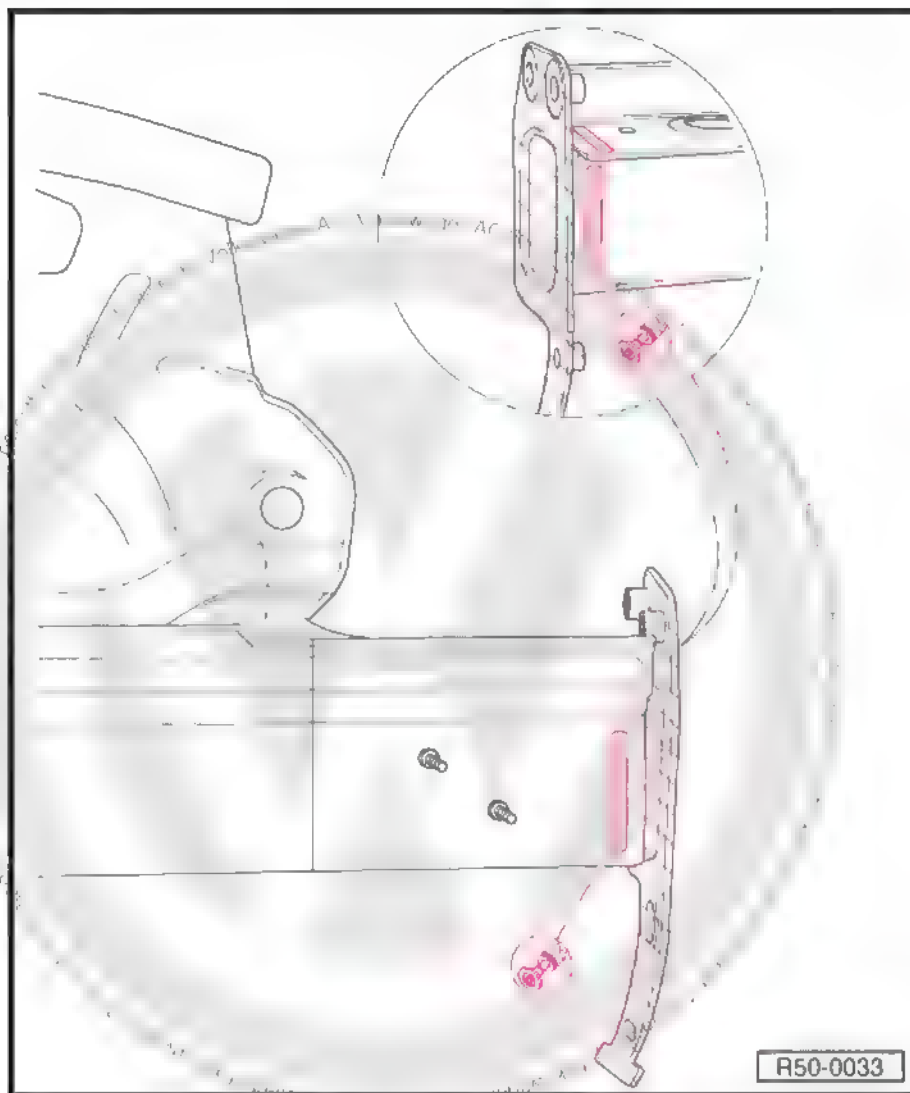


**Note**

*To replace right front bumper support, first remove tow hook support.*



- Undo plate connections.



- Grind the weld beads.
- Remove plate residues.

## 9.3 Installation

### 9.3.1 Welding

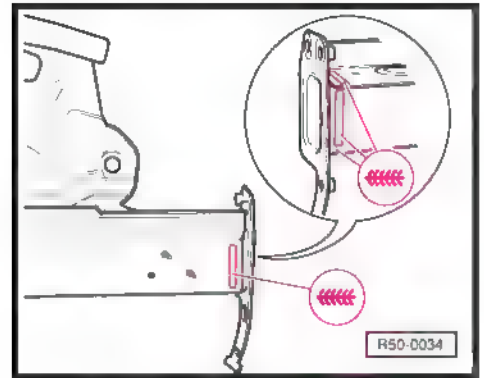
Replacement part

- ◆ Front bumper support.
- ◆ Tow hook support (only on the right side).
- Adjust and fasten the new part with the vehicle on its wheels or on the alignment platform.

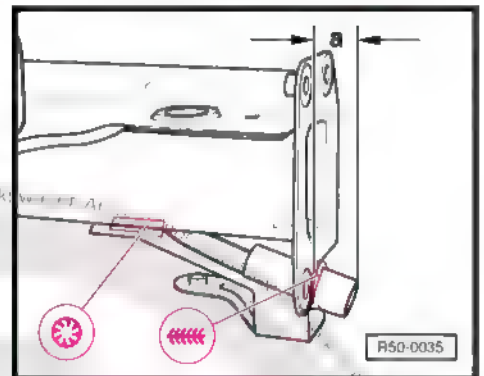




- Weld front bumper support, SG - continuous seam.  
Only on the right side of the vehicle



- Weld tow hook support, SG - hole fulfillment seam and SG - continuous seam.  
Measurement -nd- = 30 mm (up to model-year 2010)  
Measurement -nd- = 75 mm (up from model-year 2011)





## 51 – Body - Central section

RO 51 03 55 00

### 1 Roof - replace



**DANGER!**

*Follow safety instructions!*

⇒ General Information; Body Repairs, General Body Repairs :  
Safety instructions .

#### 1.1 Removal

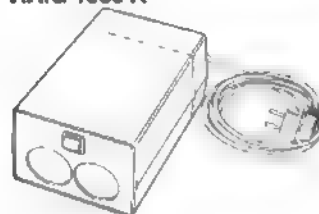
Special tools and workshop  
equipment required

- ◆ Compressed air gun -VAG 1761/1-
- ◆ Cartridge heater -VAG 1939A-
- ◆ Adhesive compressed air applicator -VAS 5237-
- ◆ Welding unit (inverter) - VAS 6237-
- ◆ Welding unit (inverter) - VAS 6237 L-
- ◆ Welding unit (inverter) - VAS 6238-
- ◆ Welding unit accessory package (inverter) -VAS 6238/1-
- ◆ Welding unit (inverter) - VAS 6239-
- ◆ Welding unit (inverter) - VAS 6249-

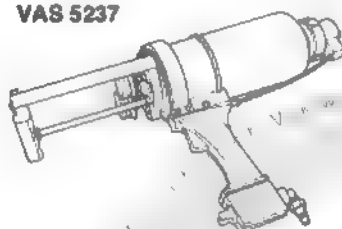
**V.A.G 1761/1**



**V.A.G 1939 A**



**VAS 5237**

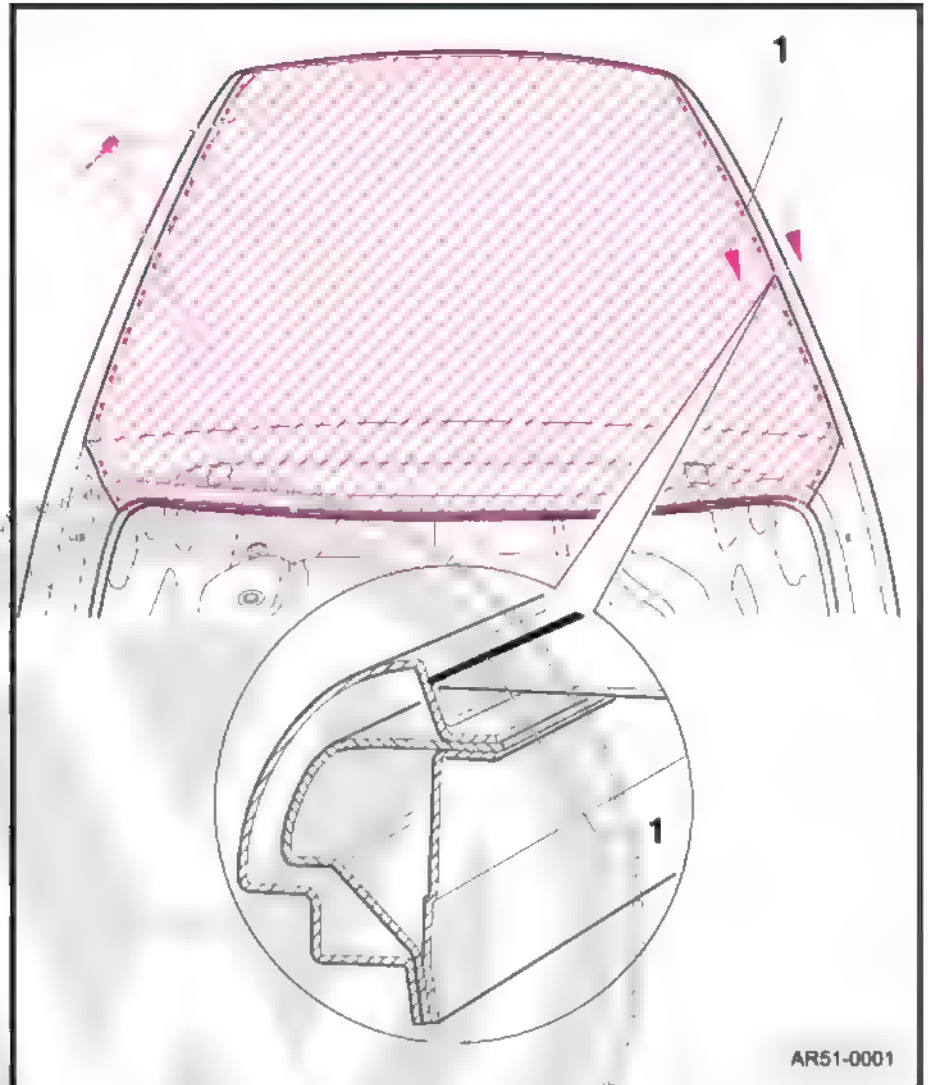


W51-0003

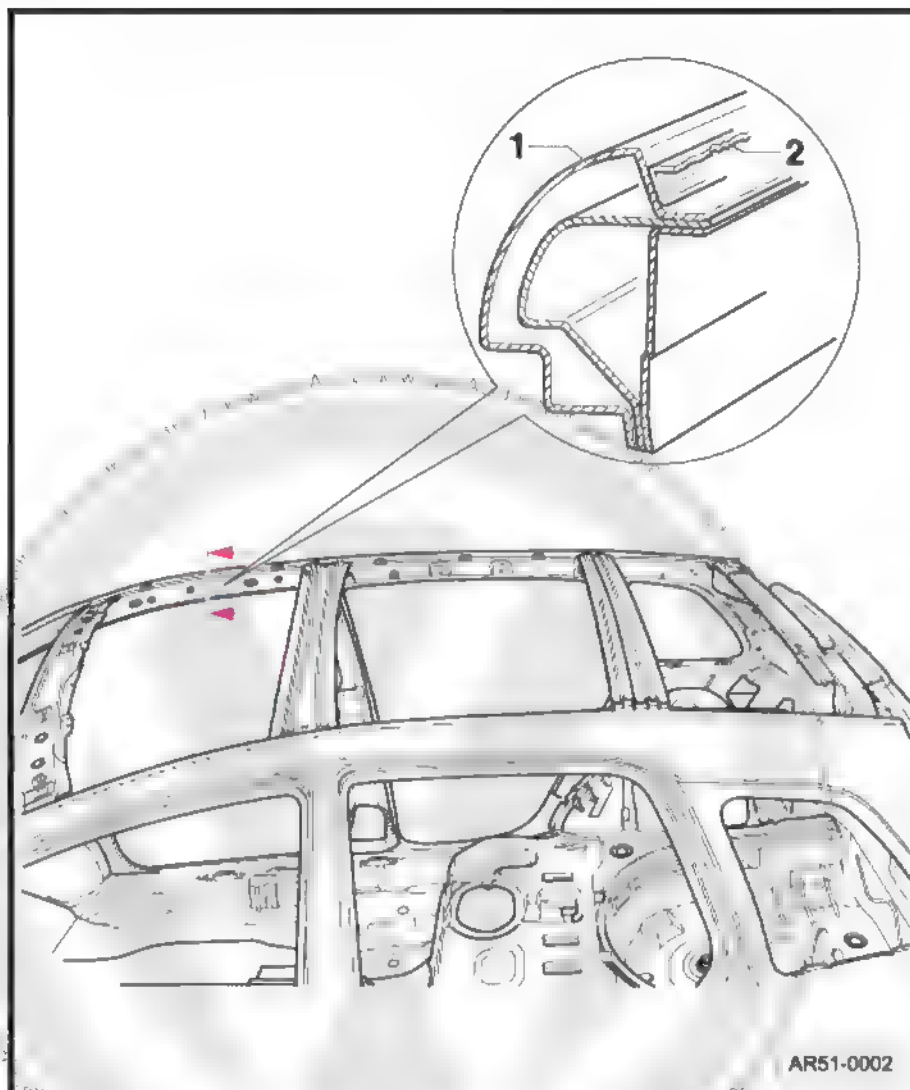


1 - Continuous laser bead

- Roughly separate the central part of the roof.



AR51-0001



- Remove the remaining parts.



#### Note

- ◆ *When removing the remaining parts -2- from roof center portion be careful, because the side connections -1- (side panels and side trims) may be damaged.*
- ◆ *Do not use separation or sanding discs.*
- Remove all adhesive and seal paste residues from the front and rear parts of the roof crossmembers and the roof reinforcement.
- Repair the painting damages on the front and rear roof cross member sections and the roof reinforcement.

## 1.2 Installation

### 1.2.1 Prepare the new part

#### Replacement part

- ◆ Central roof section



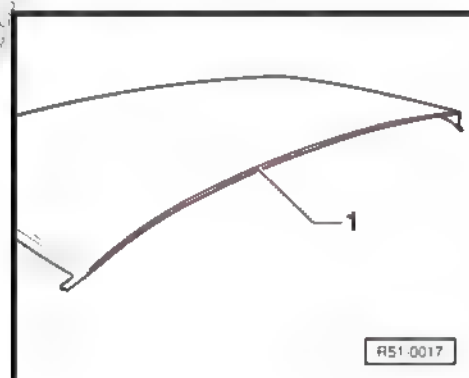
- ◆ 1K-Assembly adhesive -D 190 MKD A3- (1 cartridge)
- ◆ 2K-Assembly adhesive -DA 004 600 A2- (1 cartridge set)
- ◆ 2K body adhesive -D 180 KD3 A2- (1 cartridge set)
- ◆ Felt parts -533 867 910 B-

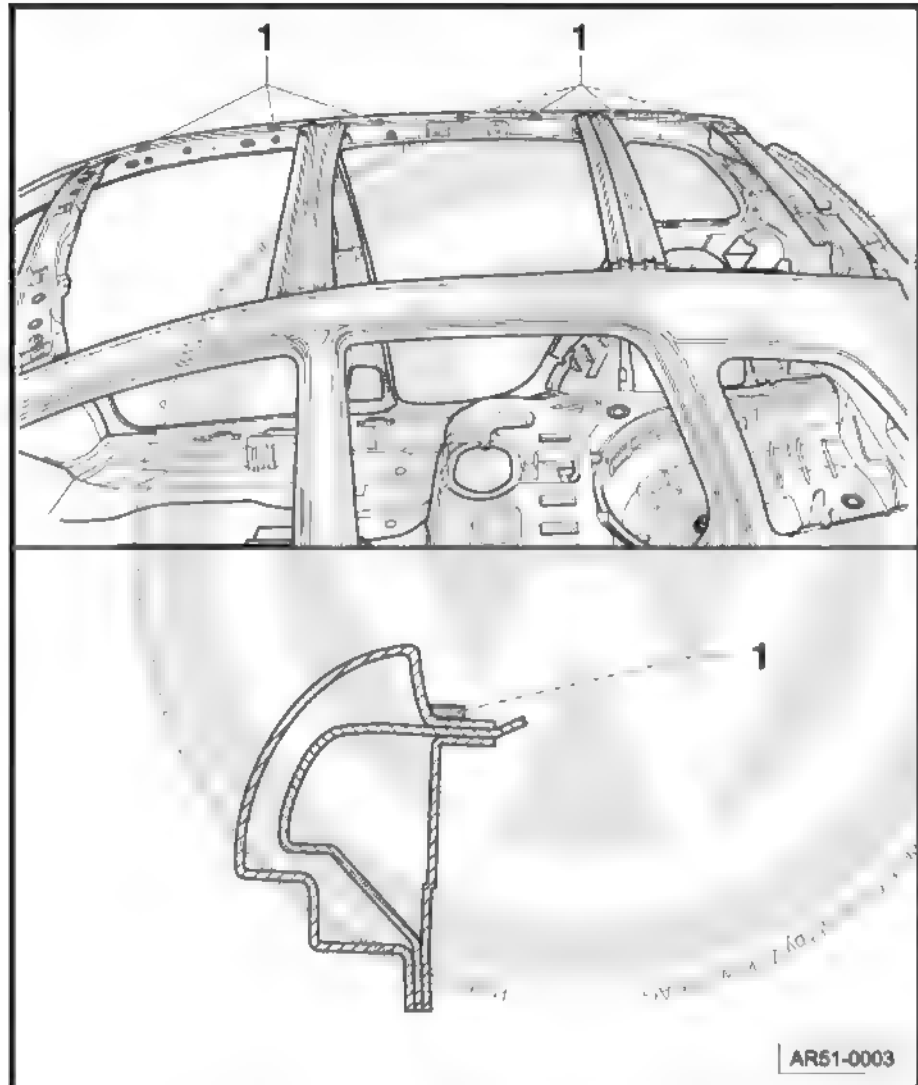


#### Note

- ◆ *In order to ensure durable and smooth roof repair, follow the work sequence below.*
- ◆ *The gluing areas must not be filled before the roof central part is glued.*
- Use fine sandpaper (grit 360) to leave the gluing area rough.
- Sand the inner and outer portions of the adhesion area -1- left and right sides, center portion of the roof, with a wet sandpaper (grain structure 800) until the even water film penetrates (the water cannot drop).

This way a good adhesion between the 2K-body adhesive and the adhesive area is ensured.





- Place approximately 10 felt parts -1- over the left and right roof frame.
- Place the central roof section over the roof frame and check the roof alignment in relation to the side panels and side frames (visual control).



**Note**

*Verify the adjustment of the central roof section with the rear lid and the windshield.*



Tension three tensioning straps (commercially available) on the roof as follows:

1. Front belt

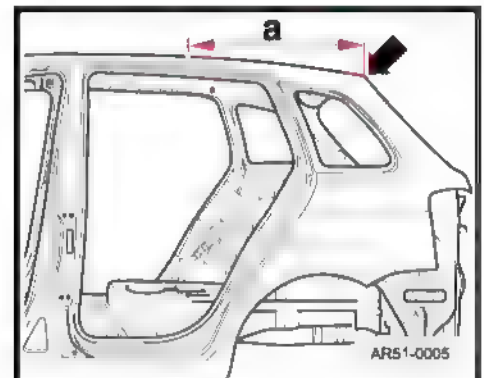
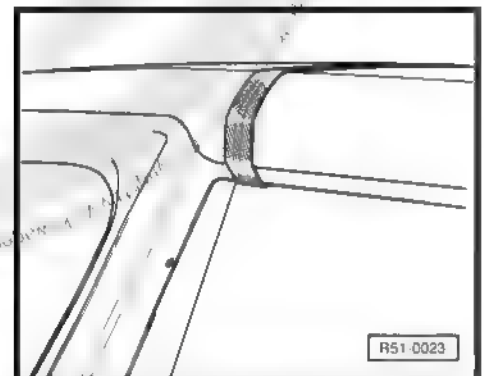
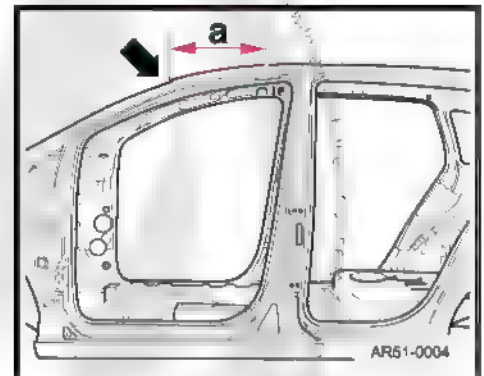
- Measure on both sides of the vehicle, starting on the front roof corner -arrow- (windshield cutout) -nd- = 350 mm backwards and mark these points in the vehicle.
- Tension the front strap at these markings

2. Center belt

- Align the central strap after the rear corner of the vehicle B pillar.

3. Rear belt

- Measure on both sides of the vehicle starting on the rear roof corner -arrow- (rear lid cut) -nd- = 700 mm forward and mark these points in the vehicle.
- Tension the rear strap at these markings.



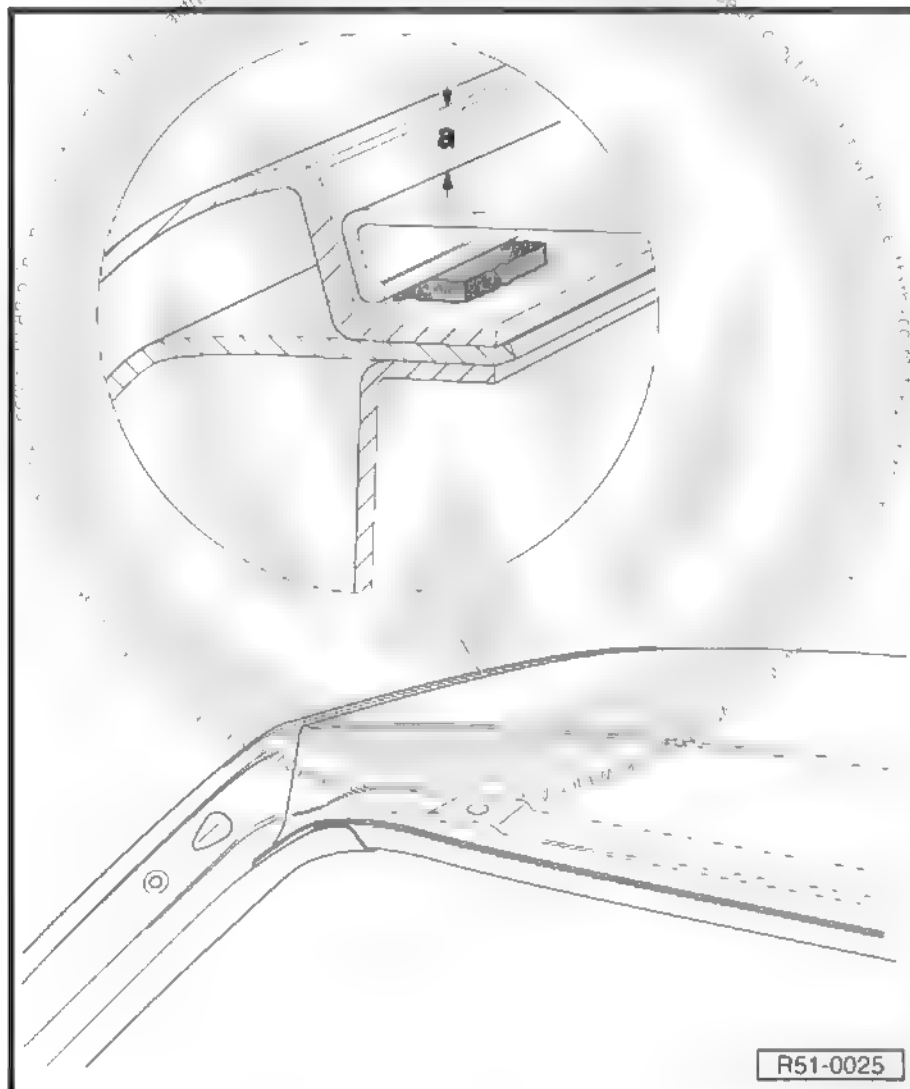
### 1.2.2 Adjust the depth measurement for the central roof section

The measurement may be adjusted so that the roof central part is low in relation to the side frame by tensioning and loosening the tension belts.



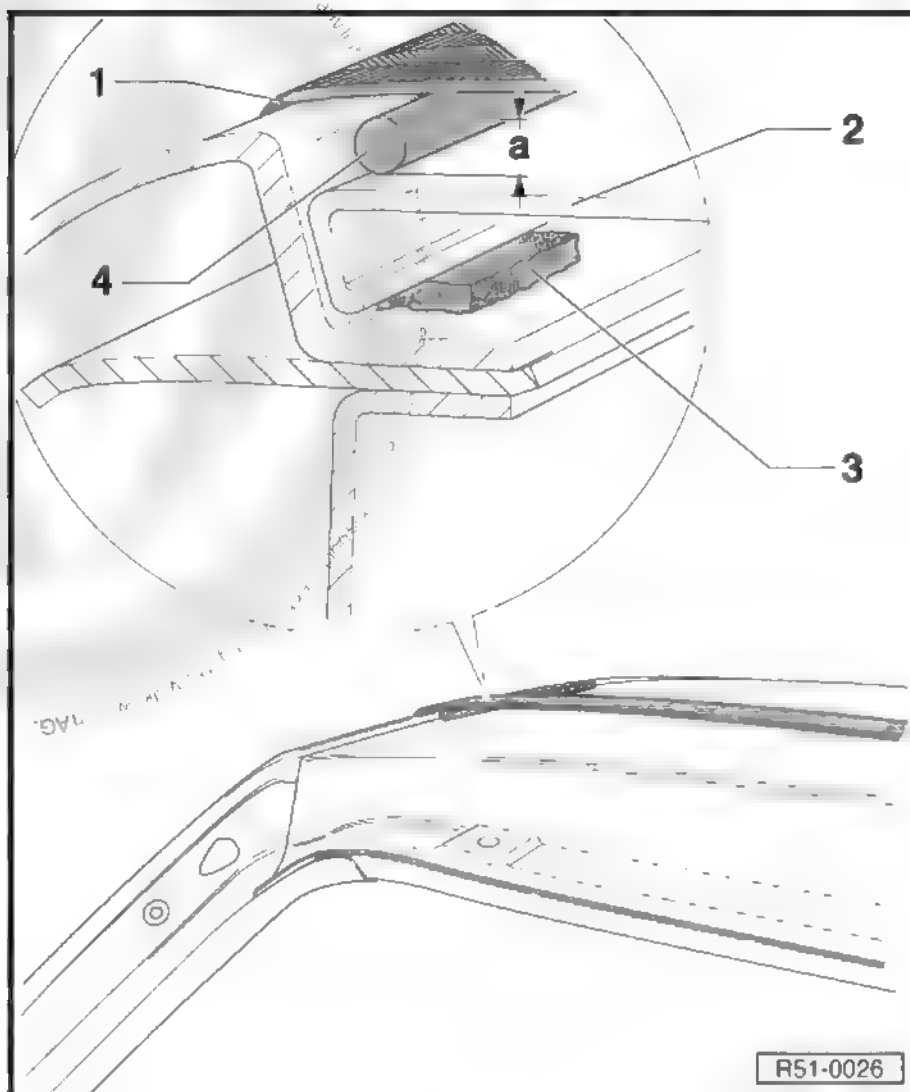
Note

To avoid damage to the central roof section or to the side frame, the tensioning straps cannot be overstretched.



Measurement -nd- = 3.0+1 mm





- Use a drill ( $\varnothing$  3.0 mm) to check the measure -nd- (drill -4- should allow a soft pressure between the center portion of the roof -2- and the tensioning strap -1-).
- If necessary, you must change the felt pieces -3- for even alignment of the roof.
- Remove the central roof section again and clean the gluing areas on the central roof section and on the vehicle with Silicone remover -LSE 020 100 A3- .

### 1.2.3 Glue the central roof section

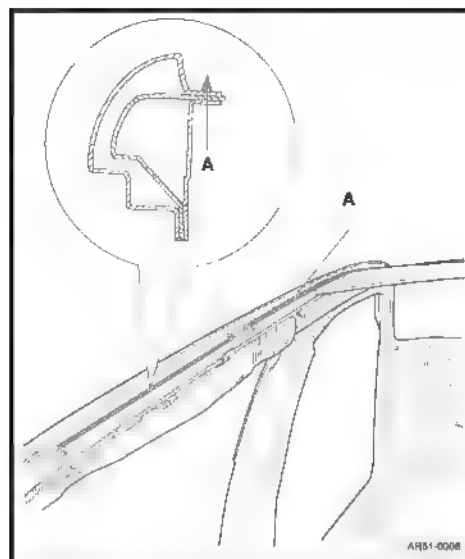


#### Note

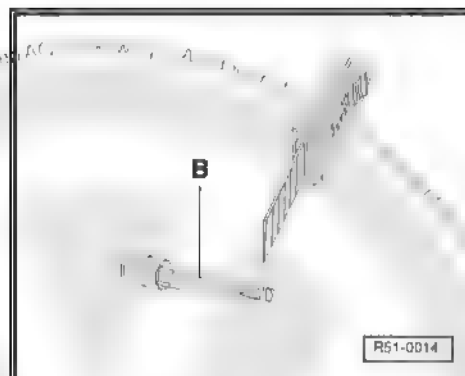
- ◆ *The gluing materials must be applied quickly.*
- ◆ *The processing time (curing time) of 2K body adhesive -D 180 KD3 A2- is of approx. 20 min.*
- ◆ *In order to apply adhesive materials, use compressed air or electric cartridge guns.*



- First, apply to the area -A- of the roof frame the 1K-Assembly adhesive -D 190 MKD A3- with Compressed air gun -VAG 1761/1- .



- For this, cut 2 mm of the nozzle -B- of the assembly adhesive kit -D 190 MKD A3- in order to get the geometry corresponding to the bead.
- Then, apply to the area -C- with 2K body adhesive -D180 KD3 A2- with an Adhesive compressed air applicator -VAS 5237- .

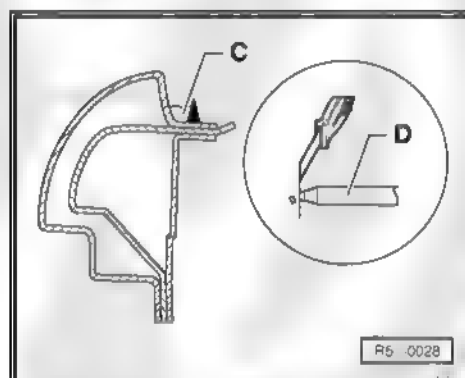


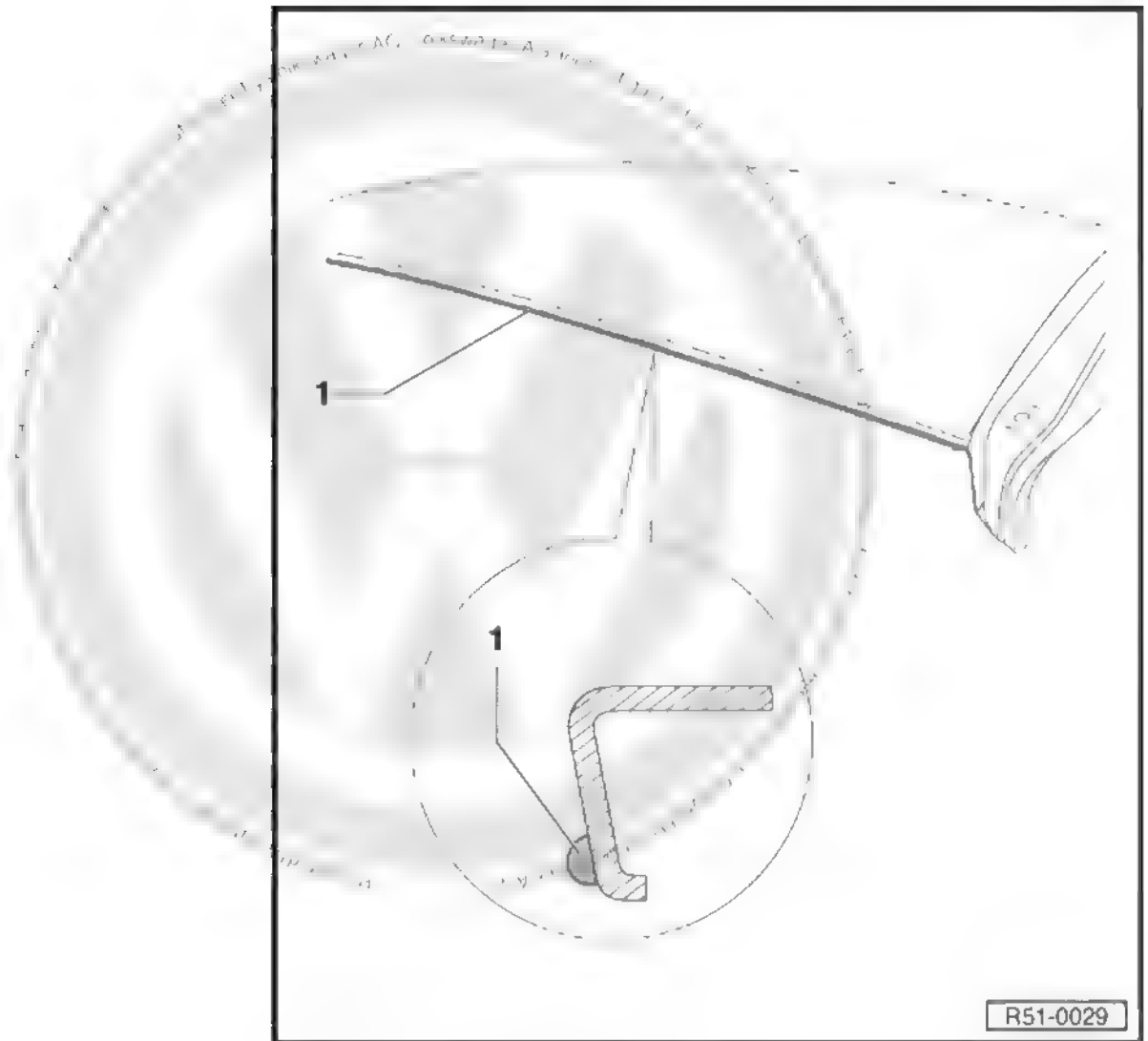
- To do so, cut the first stage of the static mixer -D-.



#### Note

- ◆ *Respect the processing time (curing time).*
- ◆ *Carefully press the gun without the static mixer until the glue comes uniformly out of the two connecting chambers of the cartridge.*
- ◆ *Afterwards, screw the static mixer to the cartridge connections.*
- ◆ *Apply the first 100 mm glue over a cardboard piece and after that start the application on the vehicle.*
- ◆ *Another technician will be required for the work steps that follow.*





- Apply 2K body adhesive -D 180 KD3 A2- -1- over the centre roof flange with seams of approx. 2 mm Ø; immediately install the roof central portion and then align it.
- Fasten the central roof section by the windshield cut and on the rear lid cut with clips, and the central area with the tensioning straps.
- Immediately remove the excessive adhesive in the roof corner with a cloth dampened with Silicone remover -LSE 020 100 A3- .
- Verify the depth dimension for the central roof section  
⇒ [page 81](#) .



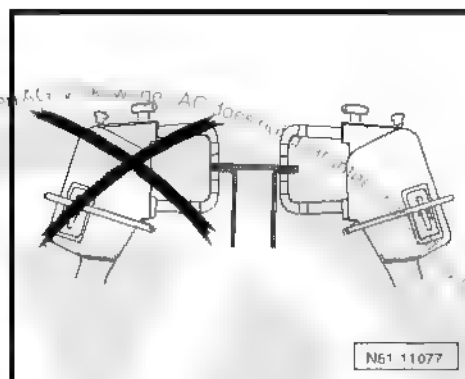
## 1.2.4 Welding



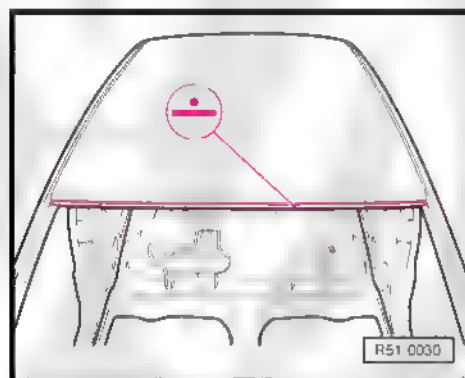
### Note

- ♦ *Welding spots RP - spot seam (one row) shall be performed in the center of the area indicated to welding.*
- ♦ *The rigidity of the set is determined by the weld disposition.*

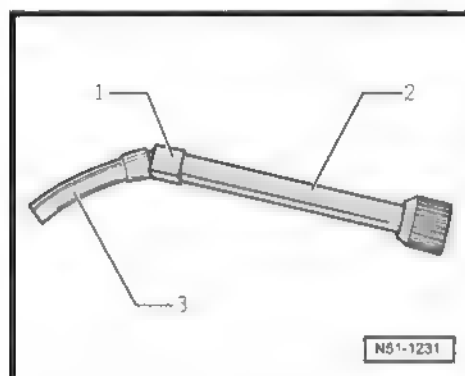
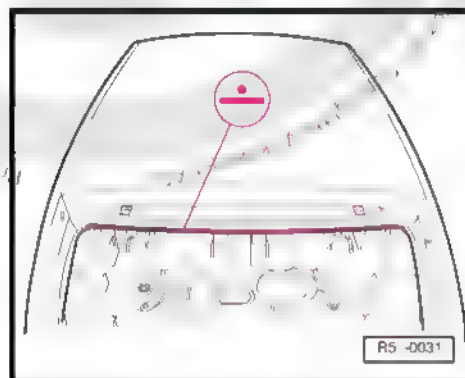
- Weld the roof central part on the windshield recess, resistance weld point.



- Weld the roof central part to the rear lid recess, resistance weld point.
- Press 1K-Assembly adhesive -D 190 MKD A3- between the central roof section and the front roof cross member, the rear roof cross member and the roof reinforcement.
- Apply the primer, on the inside, to the right and left sides of the roof frame with the Primer -ALN 002 003 04- .



- Extend tip -1- of the static mixer -2- of DA 004600 A2 -Adhesive set- with a piece of commercially available plastic hose -3- with approx. 80 mm length (inner diameter 12 mm).



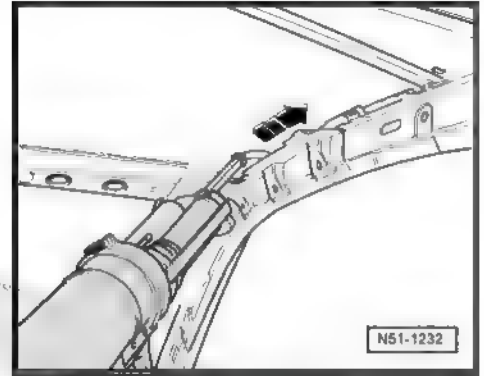


- Press 2K glass adhesive -DA 004 600 A2- on the left and right sides, between the central roof section and the roof frame.

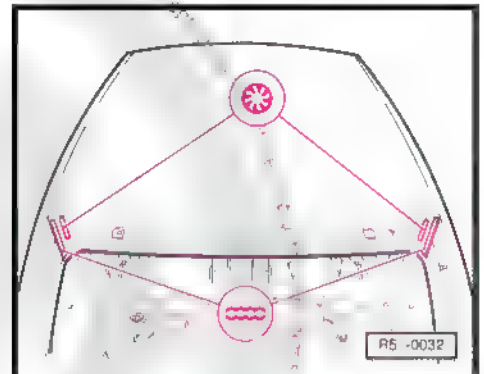


**Note**

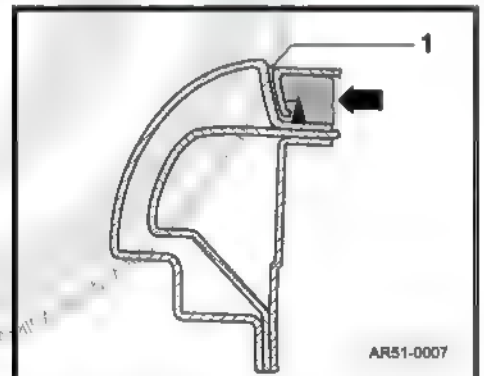
- ◆ After gluing, the vehicle shall rest from 8 to 10 hours at room temperature (min. 15 °C) on a flat surface, so that the adhesive components can become hard (curing time).
- ◆ The vehicle shall only be worked on again after curing time.



- Weld the roof central part to the rear lid recess, gas weld seam and gas weld point.
- Over the welding cord make a thin sealing -1- with Adhesive sealing putty -AKD 476 KD5 05-.



- After painting, make the maintenance treatment of the roof gaps -arrow- with Sealing for gaps -AKR 321 M15 4-.





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## 2 Front roof cross member - replace



**DANGER!**

*Follow safety instructions!*

⇒ General Information, Body Repairs, General Body Repairs ;  
Safety instructions .

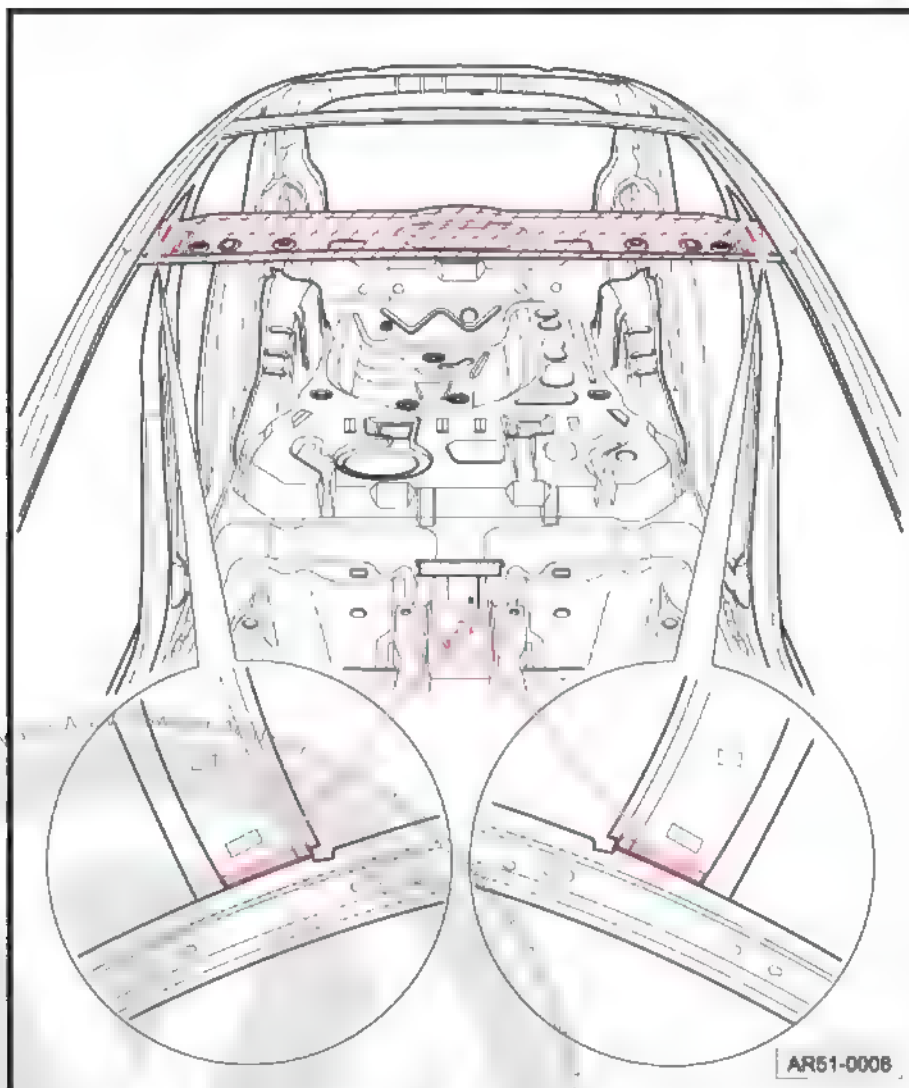
### 2.1 Tools

Special tools and workshop equipment required

- ◆ Welding unit (inverter) -VAS 6237-
- ◆ Welding unit (inverter) -VAS 6237 L-
- ◆ Welding unit (inverter) -VAS 6238-
- ◆ Welding unit accessory package (inverter) -VAS 6238/1-
- ◆ Welding unit (inverter) -VAS 6239-
- ◆ Welding unit (inverter) -VAS 6249-

### 2.2 Removal

- The roof has already been removed



- Cut the roof cross member.
- Remove the remaining parts.

## 2.3 Installation

### 2.3.1 Welding

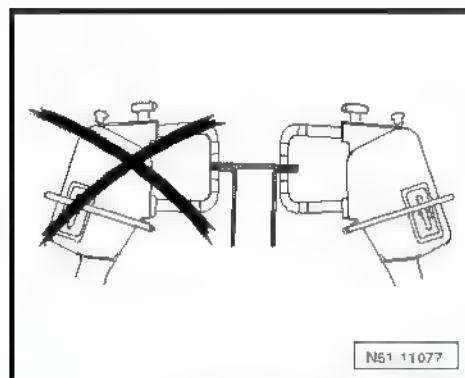
#### Replacement part

- ◆ Roof cross member
- Adjust and fasten the new part.
- Verify adjustment with the central roof section and the wind shield.

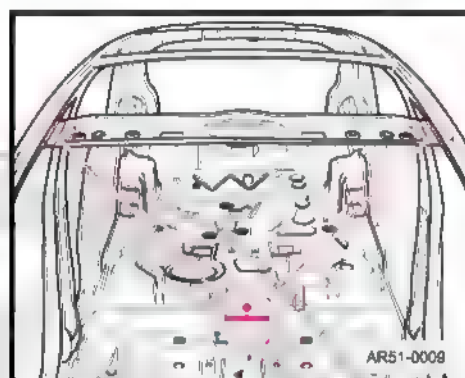


#### Note

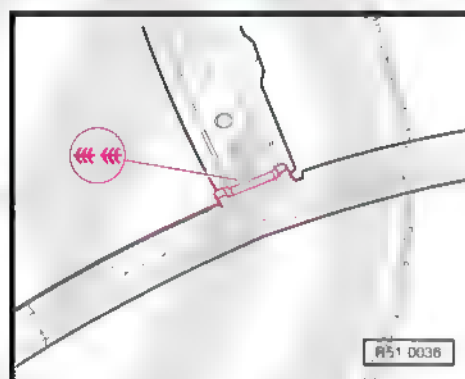
- ◆ *Welding spots RP - spot seam (one row) shall be performed in the center of the area indicated to welding.*
- ◆ *The rigidity of the set is determined by the weld disposition*



- Weld the new part, resistance weld point.



- Also weld the roof crossmember on the inside and on both sides, continuous and dotted gas weld seam.
- Install central roof section ⇒ [page 78](#).







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### 3 Central roof cross member - replace



**DANGER!**

*Follow safety instructions!*

⇒ General Information; Body Repairs, General Body Repairs ;  
Safety instructions .

#### 3.1 Tools

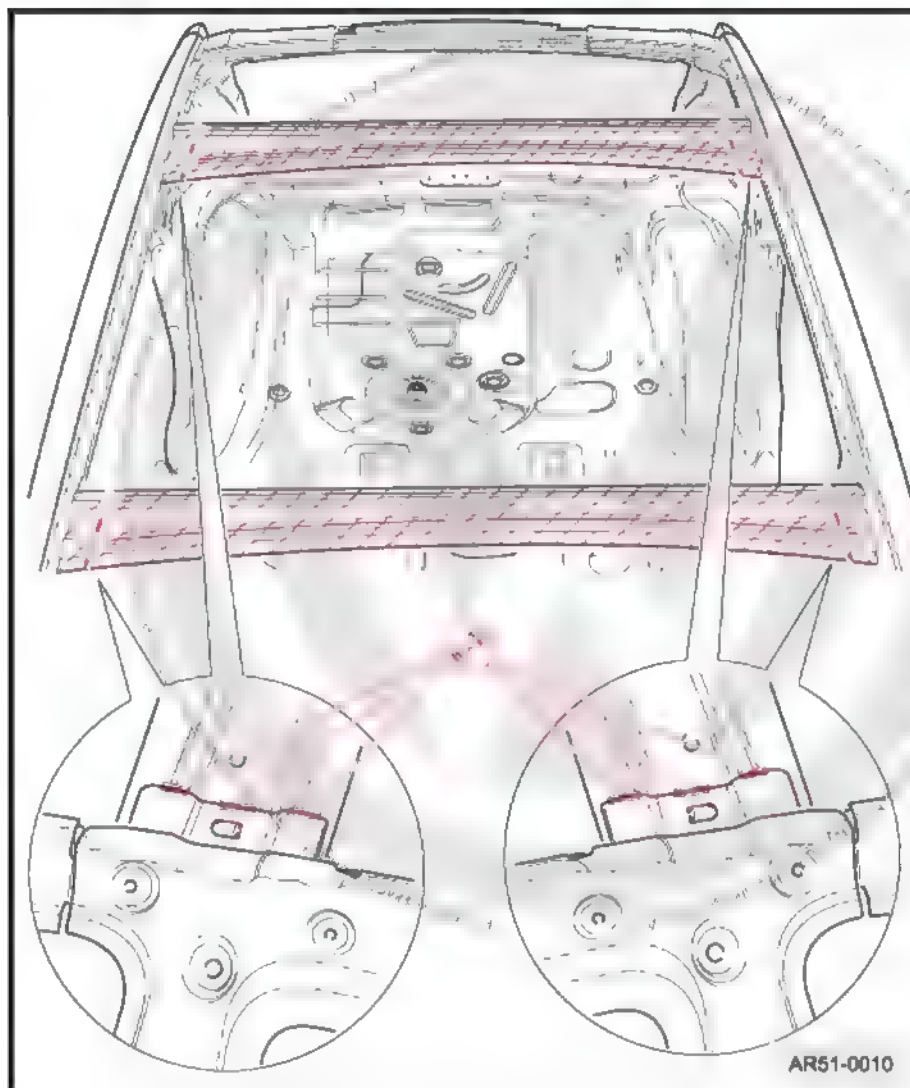
Special tools and workshop equipment required

- ◆ Welding unit (inverter) -VAS 6237-
- ◆ Welding unit (inverter) -VAS 6237 L-
- ◆ Welding unit (inverter) -VAS 6238-
- ◆ Welding unit accessory package (inverter) -VAS 6238/1-
- ◆ Welding unit (inverter) -VAS 6239-
- ◆ Welding unit (inverter) -VAS 6249-

#### 3.2 Removal

- The roof is separated





- Separate roof reinforcements.
- Remove the remaining parts.

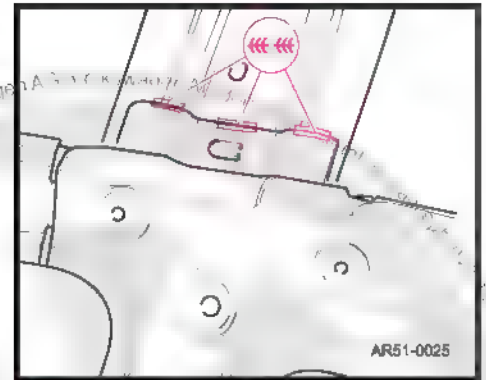
### 3.3 Welding

#### Replacement part

- ◆ Roof crossmember (replacement part name: roof reinforcement)
- Adjust and fasten the new part.
- Check the adjustment with the central roof section.



- Weld the new part, continuous and dotted gas weld seam.
- Install central roof section → [page 78](#) .





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## 4 Rear roof cross member - replace



**DANGER!**

*Follow safety instructions!*

⇒ General Information; Body Repairs, General Body Repairs ;  
Safety instructions .

### 4.1 Tools

Special tools and workshop equipment required

- ◆ Welding unit (inverter) -VAS 6237-
- ◆ Welding unit (inverter) -VAS 6237 L-
- ◆ Welding unit (inverter) -VAS 6238-
- ◆ Welding unit accessory package (inverter) -VAS 6238/1-
- ◆ Welding unit (inverter) -VAS 6239-
- ◆ Welding unit (inverter) -VAS 6249-

### 4.2 Removal

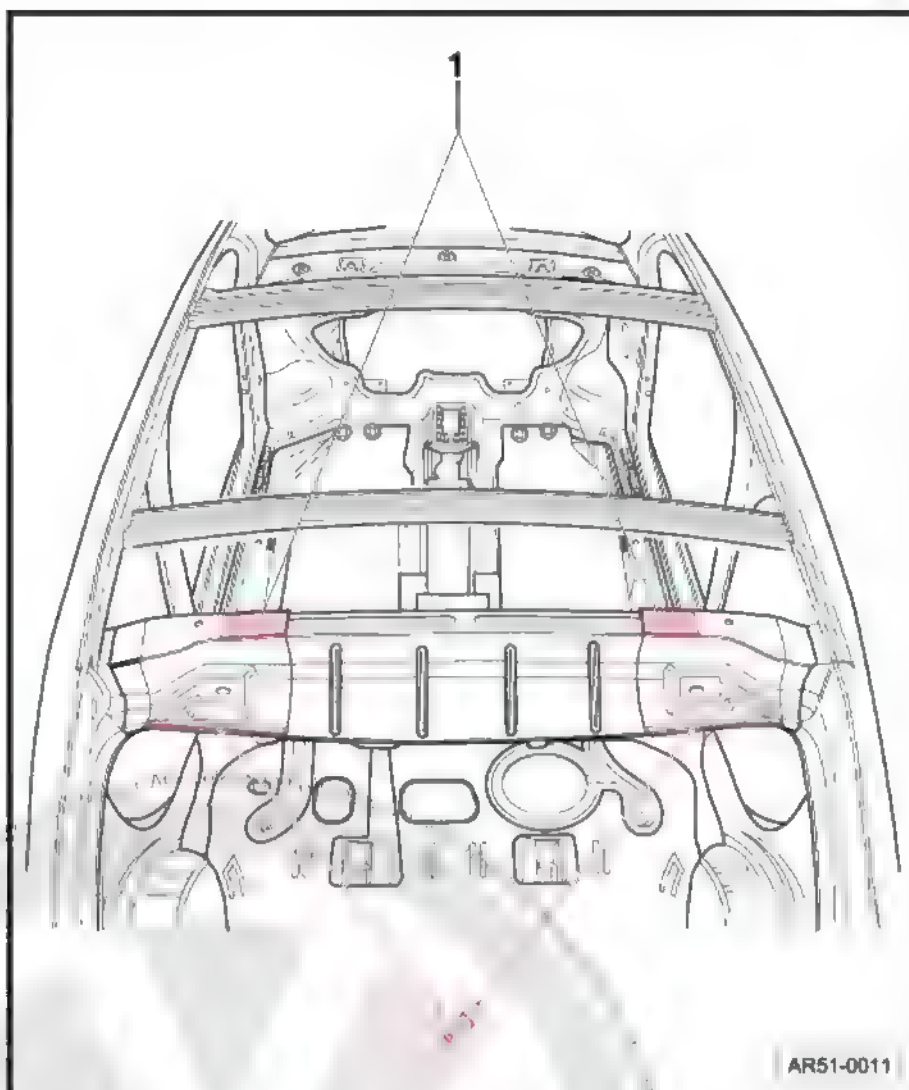
- The roof is separated

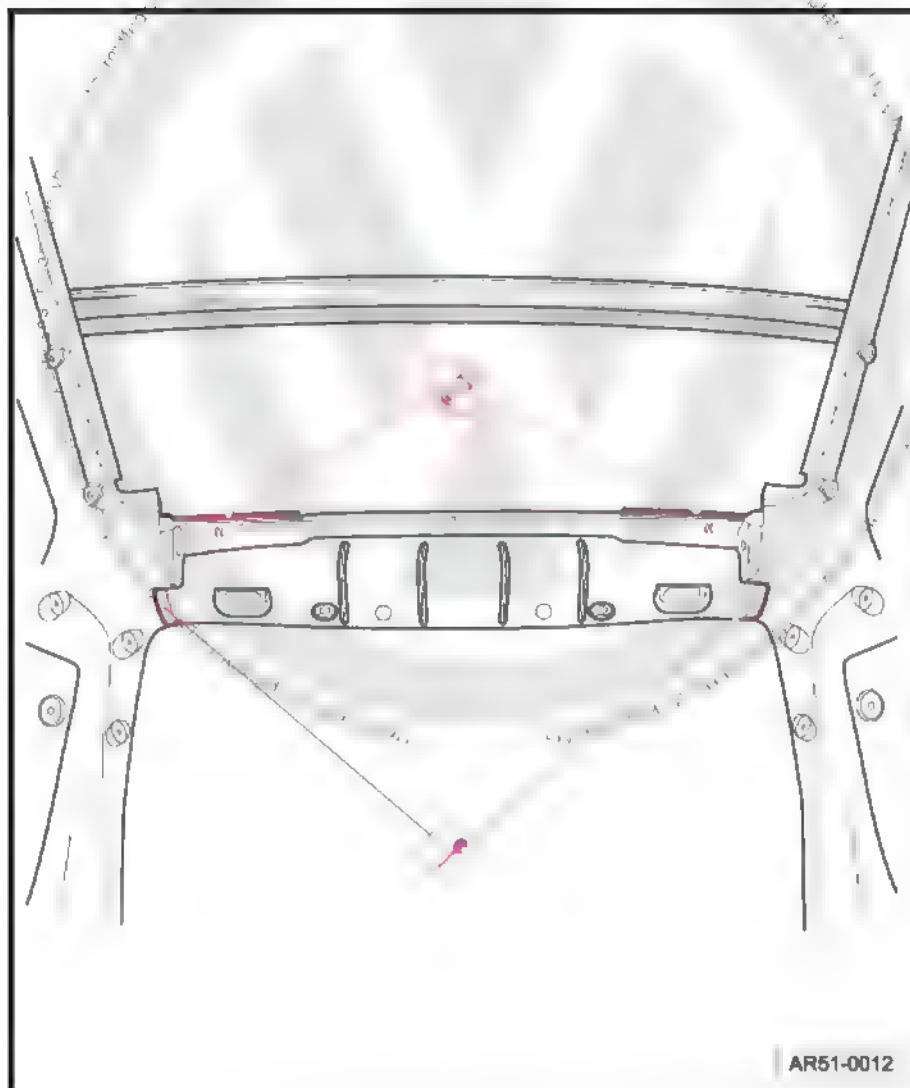




1 - Glued area

- Separate the original union from the outside.





- Separate the original union from the inside.
- Remove the remaining parts.
- Remove all adhesive residues and sand the adhesion surfaces until metal is visible.

## 4.3 Installation

### 4.3.1 Prepare the new part

#### Replacement part

- ◆ Rear roof cross member
- ◆ 1K-Assembly adhesive -D 190 MKD A3-
- Drill holes for gas weld points,  $\varnothing$  8 mm.



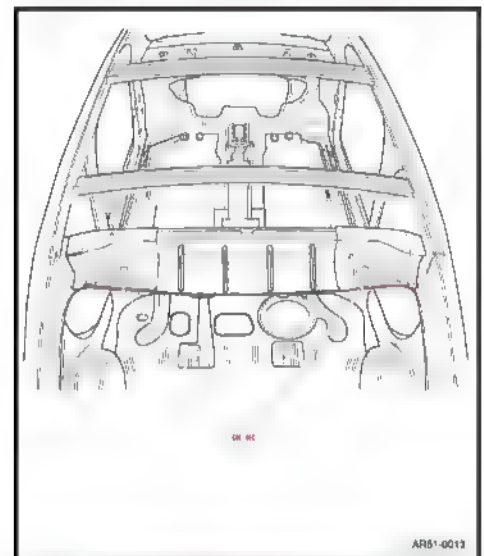
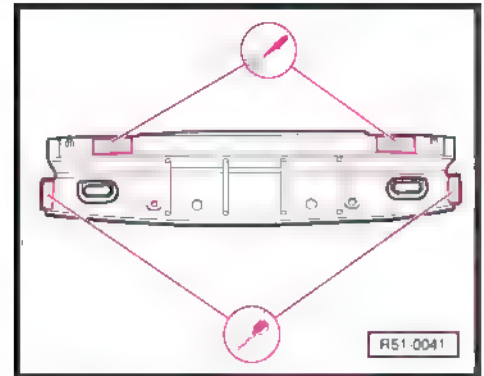
- Apply adhesive on the adhesive area 2 beads with 3.5 mm Ø.



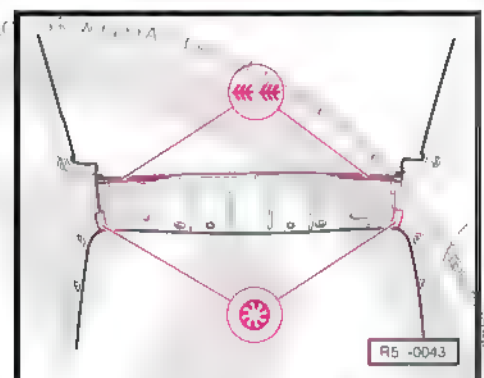
**Note**

*The new part shall be welded within 30 minutes, otherwise, the adhesive properties are lost.*

- Adjust and fasten the new part with the vehicle on its wheels or on the alignment platform.
- Verify the adjustment with the central roof section and the rear door.
- Weld the roof crossmember from the outside, continuous and dotted gas weld seam.



- Weld the roof crossmember from the inside, continuous and dotted gas weld seam and gas weld point.
- Install central roof section [⇒ page 78](#).





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## 5 Pillar A - replace



**DANGER!**

*Follow safety instructions!*

*Since gases extremely harmful to people's health and the environment are created when separating with spark-generating equipment and tools or when tin-plating in areas containing foam, such procedures must always be avoided when welding.*

⇒ General Information; Body Repairs, General Body Repairs ;  
Safety instructions .

### 5.1 Tools

Special tools and workshop equipment required

- ◆ Welding unit (inverter) -VAS 6237-
- ◆ Welding unit (inverter) -VAS 6237 L-
- ◆ Welding unit (inverter) -VAS 6238-
- ◆ Welding unit accessory package (inverter) -VAS 6238/1-
- ◆ Welding unit (inverter) -VAS 6239-
- ◆ Welding unit (inverter) -VAS 6249-



## 5.2 Removal

### 1 - Glued area

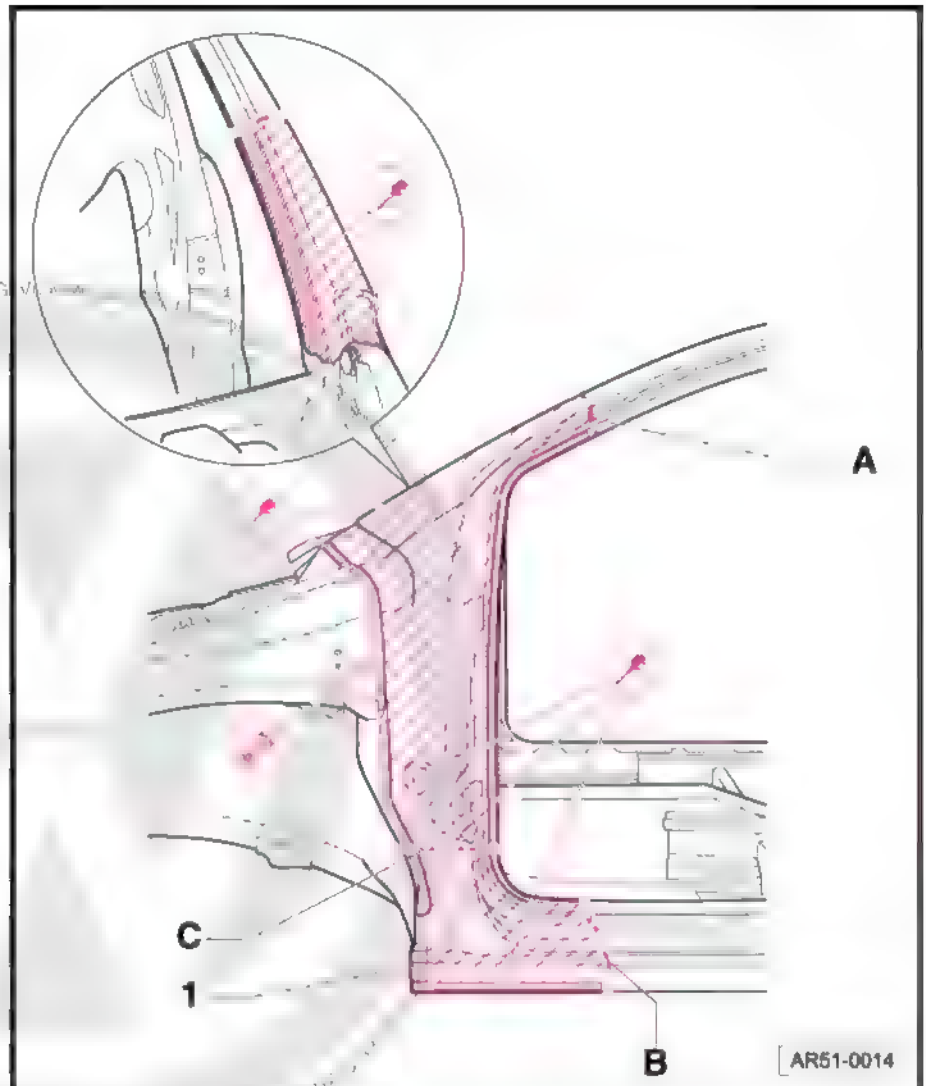
Foam residues shall be scraped as much as possible before sanding tasks.

- Make the separation cutting -A- according to damage
- Make the separation cutting -B-, as showed. Do not damage internal reinforcements.



#### Note

Release the original union.



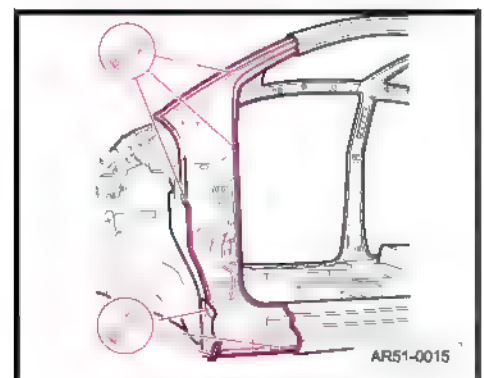
### Partial renewal

*Make the separation cutting -C-, a replacement may be carried out, according to the damage.*

*Do not damage internal reinforcements.*

*The reinforcements may be felt through the openings.*

- Remove the remaining parts.
- Remove all adhesive residues and sand the adhesion surfaces until metal is visible.





## 5.3 Installation

### 5.3.1 Prepare the new part

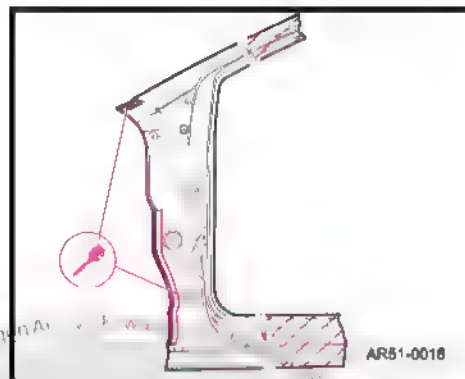
#### Replacement part

- ◆ Partial part of pillar A with lower longitudinal member
- ◆ Molded foam part
- ◆ 2K body adhesive -D 180 KD3 A2-
  - Pass the separation cut to the new part and cut.
  - Drill holes for gas weld points,  $\varnothing$  8 mm.
  - Apply adhesive on the adhesive area. 2 seams with 3.5 mm diameter.



#### Note

*The new part shall be welded within 30 minutes, otherwise, the adhesive properties are lost.*



### 5.3.2 Foam parts/mountings

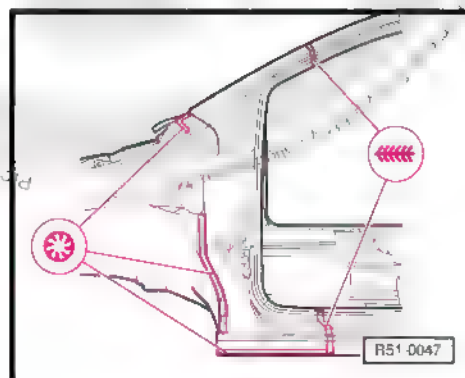
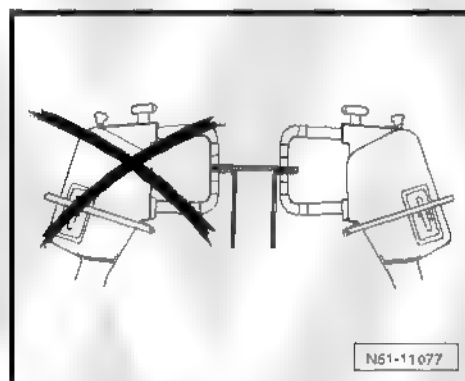
Follow repair instructions ⇒ [page 3](#).

### 5.3.3 Welding



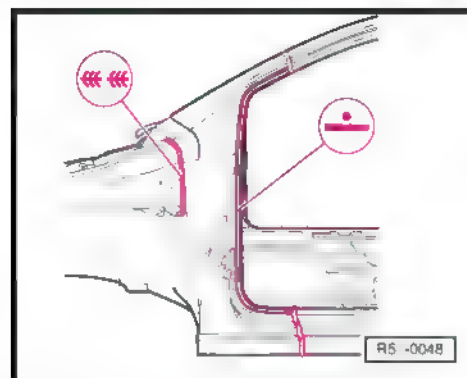
#### Note

- ◆ *Welding spots RP - spot seam (one row) shall be performed in the center of the area indicated to welding.*
- ◆ *The rigidity of the set is determined by the weld disposition.*
  - Adjust and fasten the new part with the vehicle on its wheels or on the alignment platform.
  - Place the material itself behind the separation cuts.
  - Check adjustment with complementary parts.
  - Weld the A-pillar, gas weld point.
  - Weld the separation cuts from top-to-top, continuous gas weld seam.

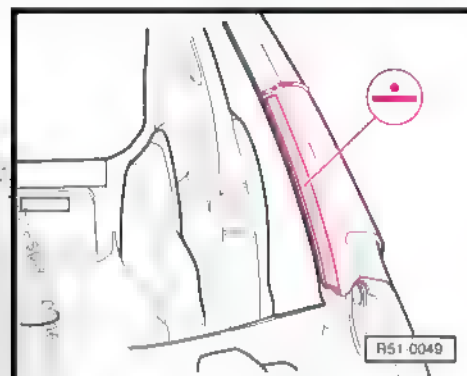




- Re-establish the original union, resistance weld point and continuous and dotted gas weld seam.



- Re-establish other connections on the windshield recess, resistance weld point.





RO 51 38 55 50

## 6 Pillar A (internal section) - replace



**DANGER!**

*Follow safety instructions!*

*Since gases extremely harmful to people's health and the environment are created when separating with spark-generating equipment and tools or when tin-plating in areas containing foam, such procedures must always be avoided when welding.*

⇒ General Information; Body Repairs, General Body Repairs ;  
Safety instructions .

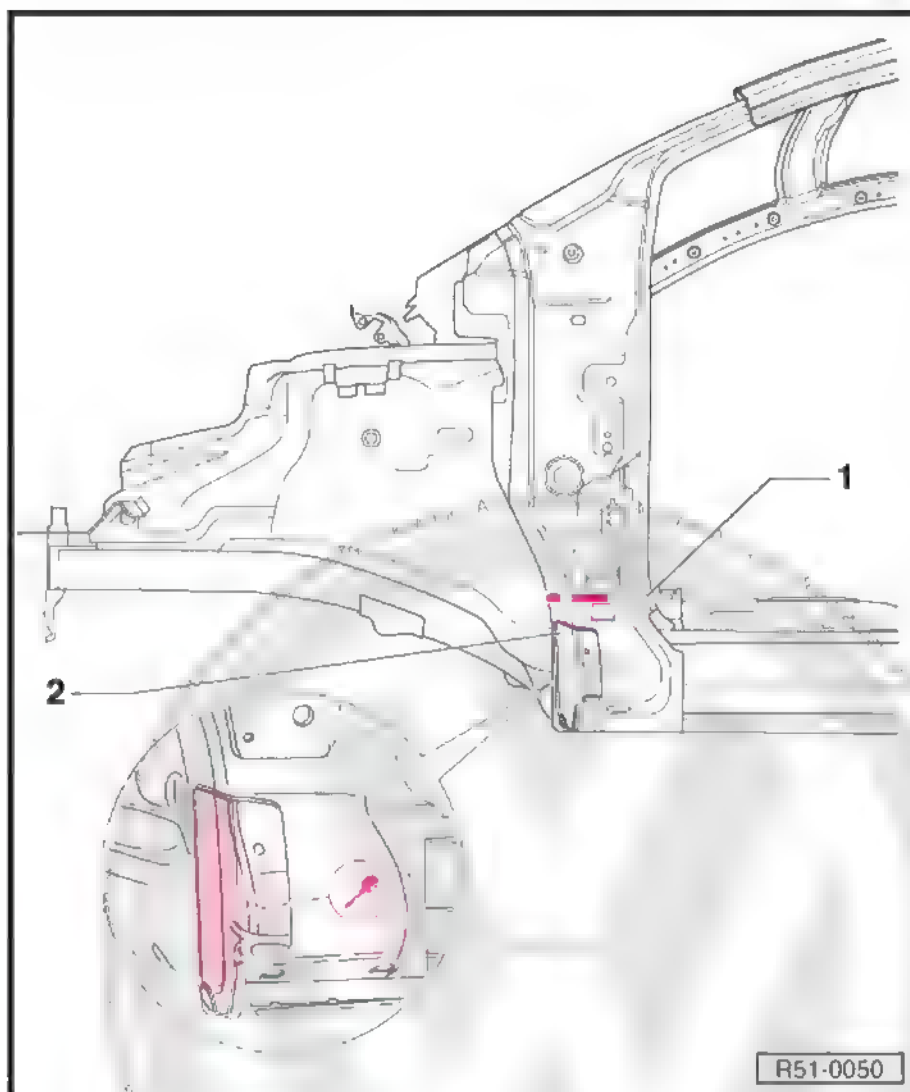
### 6.1 Tools

Special tools and workshop equipment required

- ◆ Welding unit (inverter) -VAS 6237-
- ◆ Welding unit (inverter) -VAS 6237 L-
- ◆ Welding unit (inverter) -VAS 6238-
- ◆ Welding unit accessory package (inverter) -VAS 6238/1-
- ◆ Welding unit (inverter) -VAS 6239-
- ◆ Welding unit (inverter) -VAS 6249-

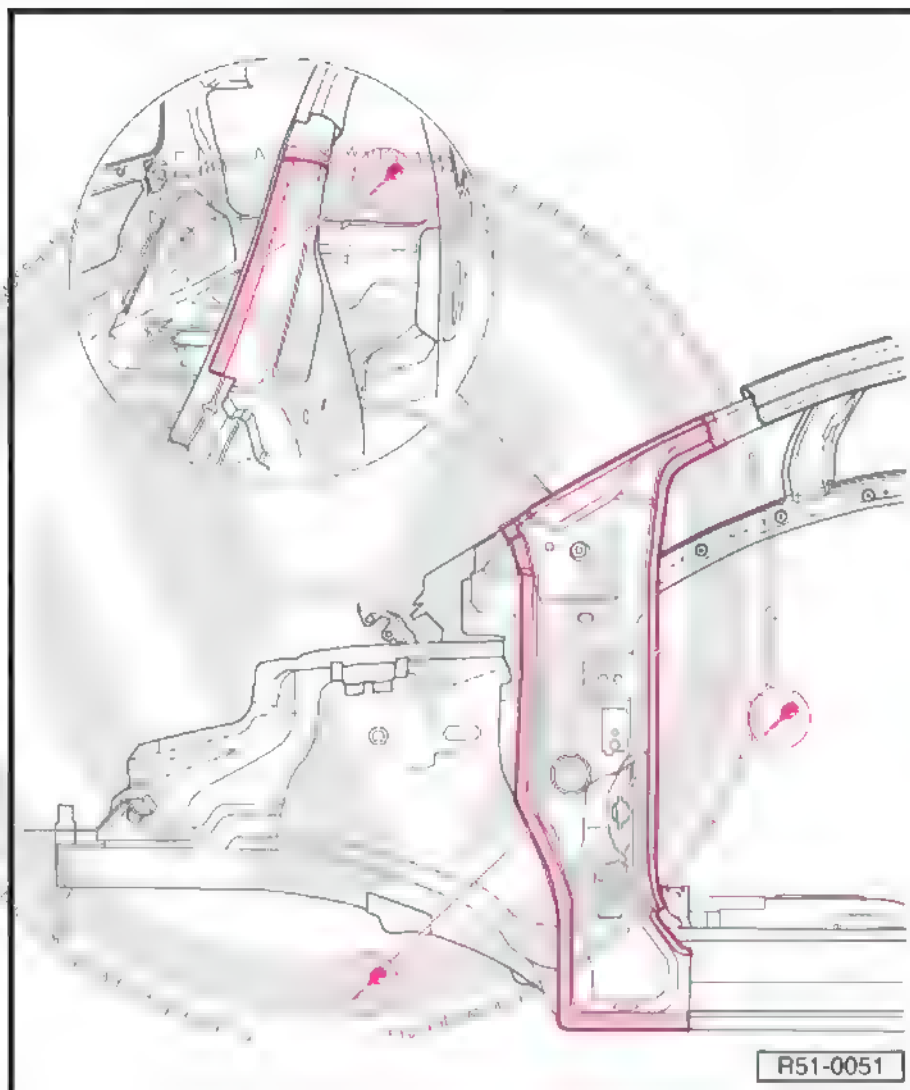
### 6.2 Removal

Foam residues shall be scraped as much as possible before sanding tasks.

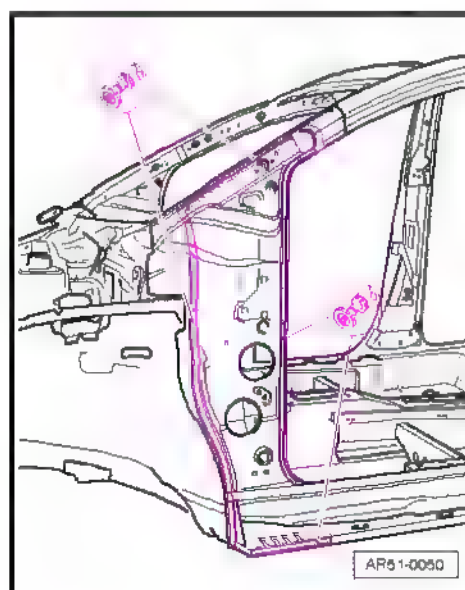


Make the separation cutting -1- it is possible to partially replace the internal section of the pillar A without the need for disassembling or damaging the lower longitudinal member reinforcement.

- Drill inner plate -2- and reuse it, if necessary.



- Undo plate connections.
- Remove plate residues.



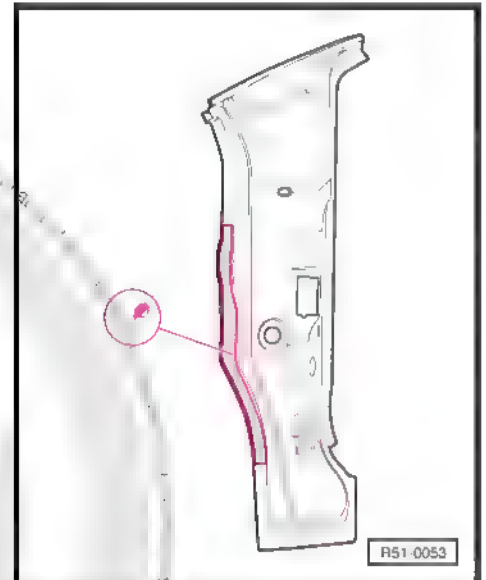


## 6.3 Installation

### 6.3.1 Prepare the new part

Replacement part

- ◆ Internal section of pillar A
- ◆ Foam part/support
- Make holes for SG - hole fulfillment seam,  $\varnothing$  8 mm.



### 6.3.2 Molded foam parts

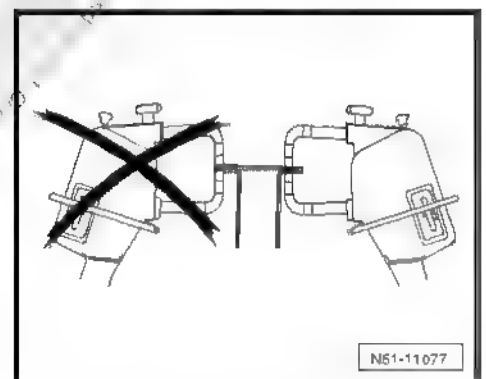
Follow repair instructions [⇒ page 3](#).

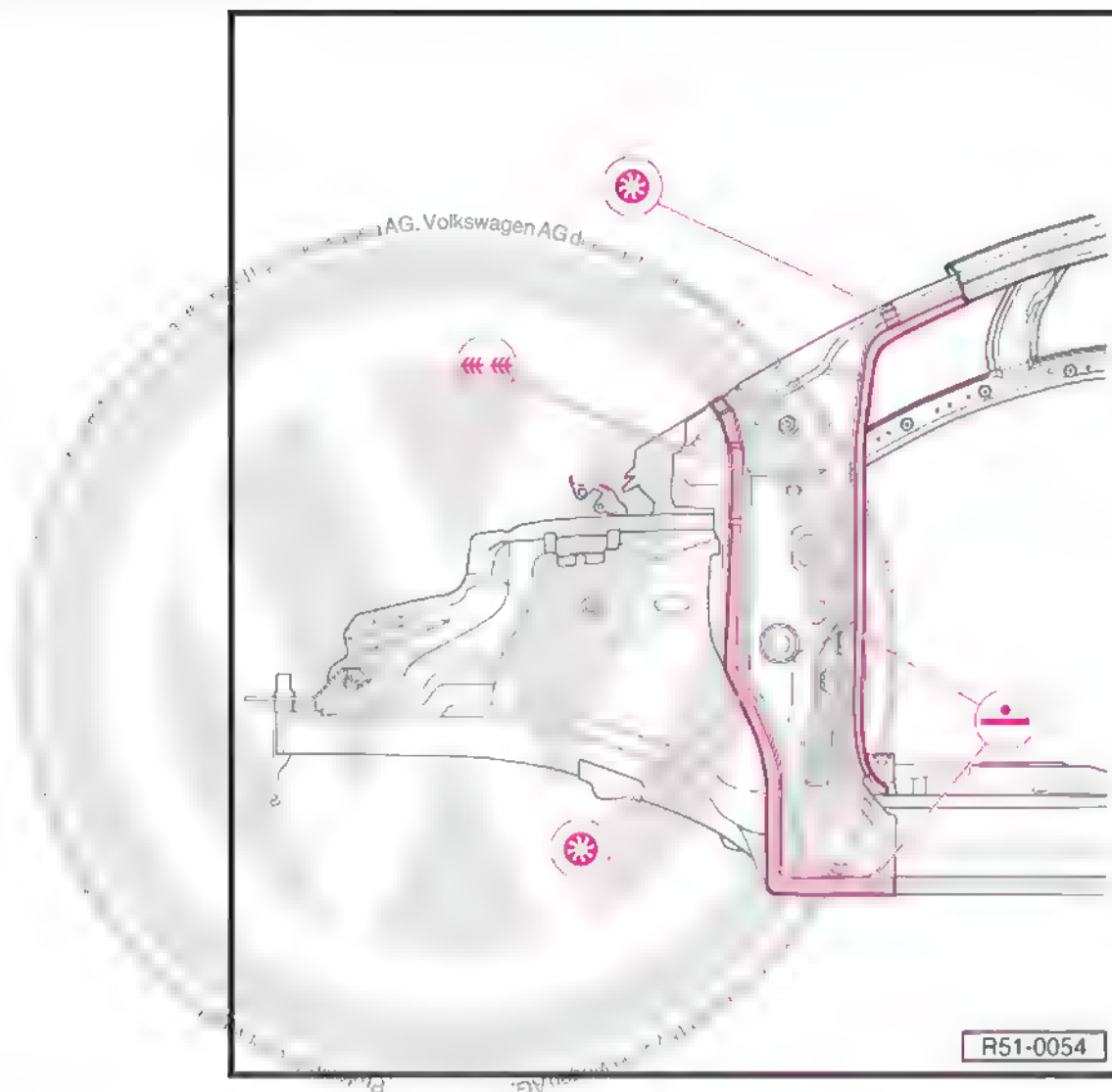
### 6.3.3 Welding



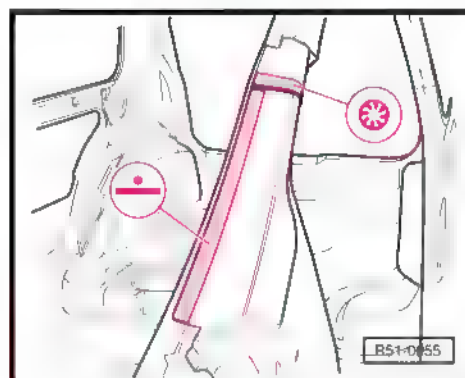
Note

- ◆ *Welding spots RP - spot seam (one row) shall be performed in the center of the area indicated to welding.*
- ◆ *The rigidity of the set is determined by the weld disposition.*
- Adjust and fasten the new part with the vehicle on its wheels or on the alignment platform.
- Check the adjustment with other components.





- Weld the new part, SG - hole fulfillment seam and SG - seam (discontinuous).
- Re-establish original connection, RP - spot seam (one row).
- Weld internal part of pillar A in windshield cut, RP - spot seam (one row).
- Install the external section of pillar A ⇒ [page 100](#) .







RO 51 41 55 12

## 7 Pillar B (external section) - replace



### WARNING

*Follow safety notes!*

Safety instructions ⇒ General notes; Body repairs; Body assembly works; Safety notes. .

### 7.1 Tools

Special tools and workshop equipment required

- ◆ Welding unit (inverter) -VAS 6237-
- ◆ Welding unit (inverter) -VAS 6237 L-
- ◆ Welding unit (inverter) -VAS 6238-
- ◆ Welding unit accessory package (inverter) -VAS 6238/1-
- ◆ Welding unit (inverter) -VAS 6239-
- ◆ Welding unit (inverter) -VAS 6249-



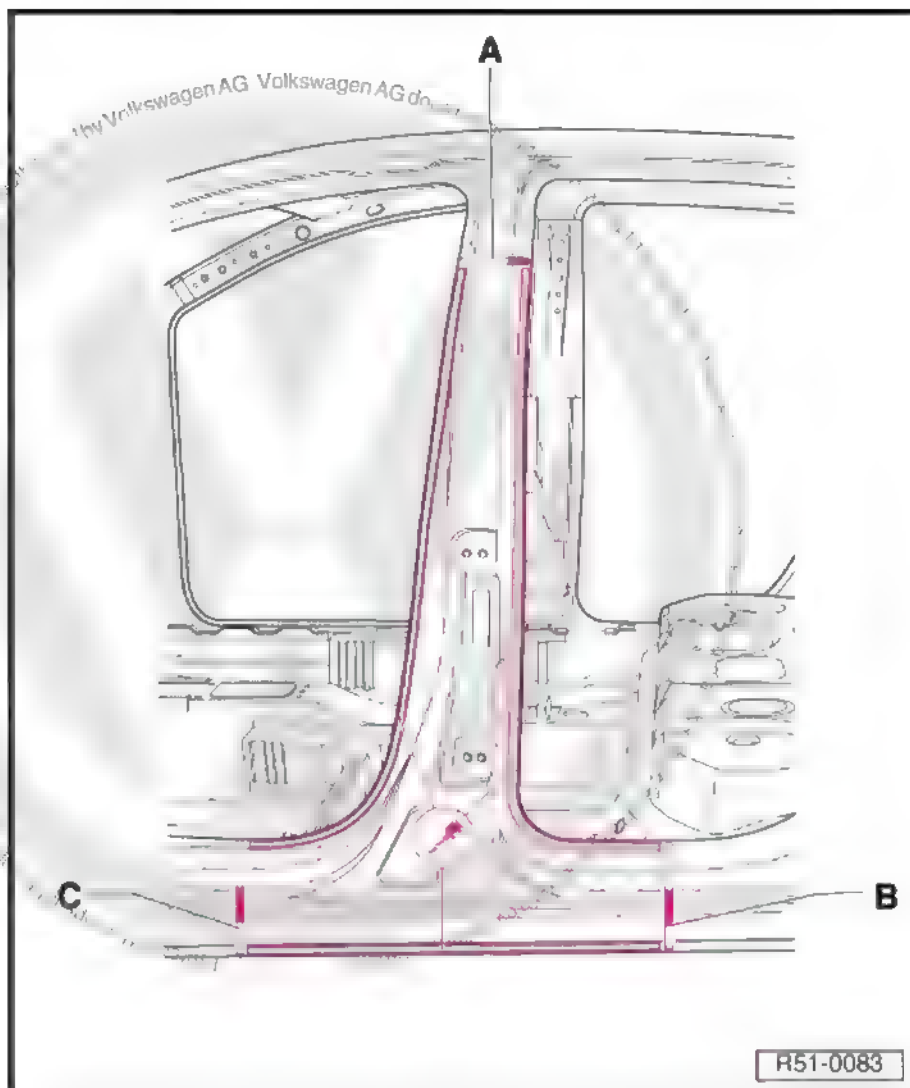
## 7.2 Removal

1 - Pillar B cutting line for replacement

- ◆ Cut the pillar B plate on the line -A-.
- ◆ Cut the pillar B plate on the line -B- and -C-.
- ◆ Always pay attention to damage level.
- ◆ Release the original union.

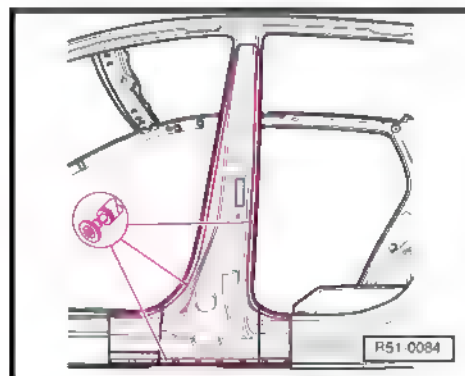


Note



### 7.2.1 Part replacement

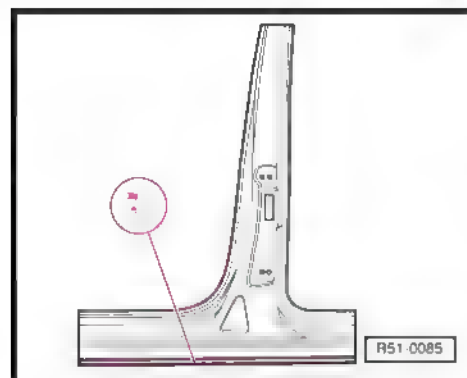
- Sand connection surfaces until metal is visible.
- Clean connection areas until they are free from dust and grease.





## 7.2.2 Preparing the replacement part

- ◆ External pillar B
- Cut replacement part following cutting lines established on the body -A-, -B- and -C-.
- Make  $\varnothing$  8 mm holes for SG - hole fulfillment seam.

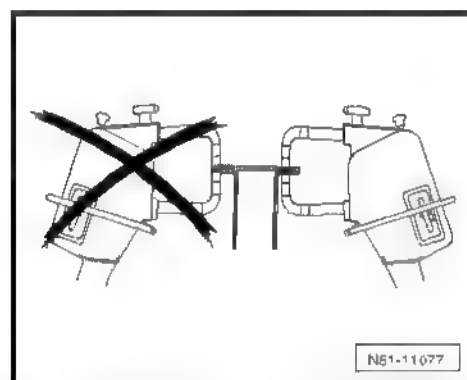


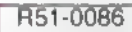
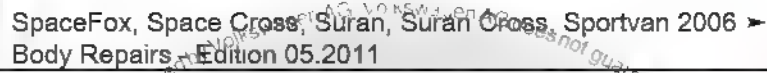
## 7.2.3 Welding



### Note

- ◆ *Welding spots RP - spot seam (one row) shall be performed in the center of the area indicated to welding.*
- ◆ *The rigidity of the set is determined by the weld disposition.*
- ◆ *Use of different types and thickness of steel demands appropriate spot welding equipment.*





- 110 Rep. Gr 51 Body Central section



RG 51 42 55 60

## 8 Pillar B (outer section) - replace



### WARNING

*Follow safety notes!*

Safety instructions ⇒ General notes; Body repairs, Body assembly works; Safety notes .

### 8.1 Tools

Special tools and workshop equipment required

- ◆ Welding unit (inverter) -VAS 6237-
- ◆ Welding unit (inverter) -VAS 6237 L-
- ◆ Welding unit (inverter) -VAS 6238-
- ◆ Welding unit accessory package (inverter) -VAS 6238/1
- ◆ Welding unit (inverter) -VAS 6239-
- ◆ Welding unit (inverter) -VAS 6249-

### 8.2 Removal

- ◆ External pillar B removed.

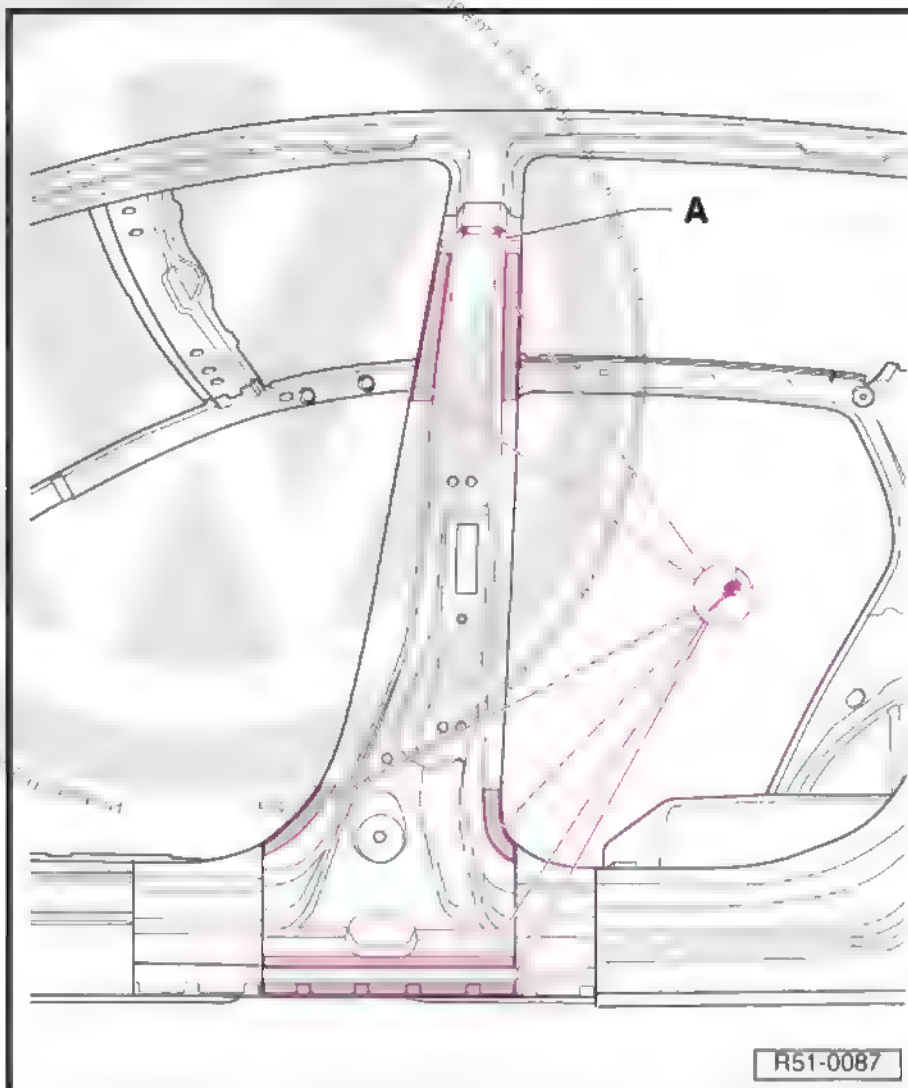


### 1 - Cutting line for replacement

- ♦ Cut the pillar B plate on the line -A- above the seat belt fastening region, 50 mm below the external section of pillar B plate cut.
- ♦ Release the original union

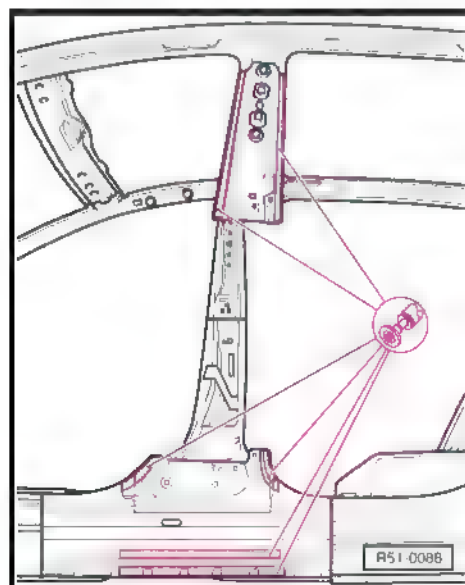


Note



### 8.2.1 Part replacement

- Sand connection surfaces until metal is visible.
- Clean connection areas until they are free from dust and grease.





## 8.3 Installation



### Note

*Use of different types and thickness of steel demands appropriate spot welding equipment.*

### 8.3.1 Preparing the replacement part

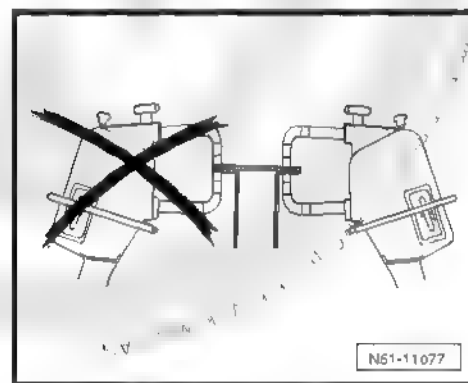
- ◆ Internal pillar B
- ◆ External pillar B
- Cut the replacement part according to the cuts established on the body.
- Make  $\varnothing$  8 mm holes for SG - hole fulfillment seam.
- Apply the assembly adhesive -DA 001 730 A1- on the hinge region.

### 8.3.2 Welding



### Note

- ◆ *Welding spots RP - spot seam (one row) shall be performed in the center of the area indicated to welding.*
- ◆ *The rigidity of the set is determined by the weld disposition.*





- Adjust and fasten the internal section of pillar B with the vehicle on its wheels or on the alignment bench.
- Check the body dimensions (door gaps).
- Weld internal section of pillar B sides with RP - spot seam (one row).
- Weld upper section with SG - continuous seam.
- Weld lower section with SG - hole fulfillment seam.





RO 51 45 55 12

## 9 Lower member (outer portion) - replace



**WARNING**

*Follow safety notes!*

Safety instructions ⇒ General notes; Body repairs, Body assembly works; Safety notes .

### 9.1 Tools

Special tools and workshop equipment required

- ◆ Welding unit (inverter) -VAS 6237-
- ◆ Welding unit (inverter) -VAS 6237 L-
- ◆ Welding unit (inverter) -VAS 6238-
- ◆ Welding unit accessory package (inverter) -VAS 6238/1-
- ◆ Welding unit (inverter) -VAS 6239-
- ◆ Welding unit (inverter) -VAS 6249-



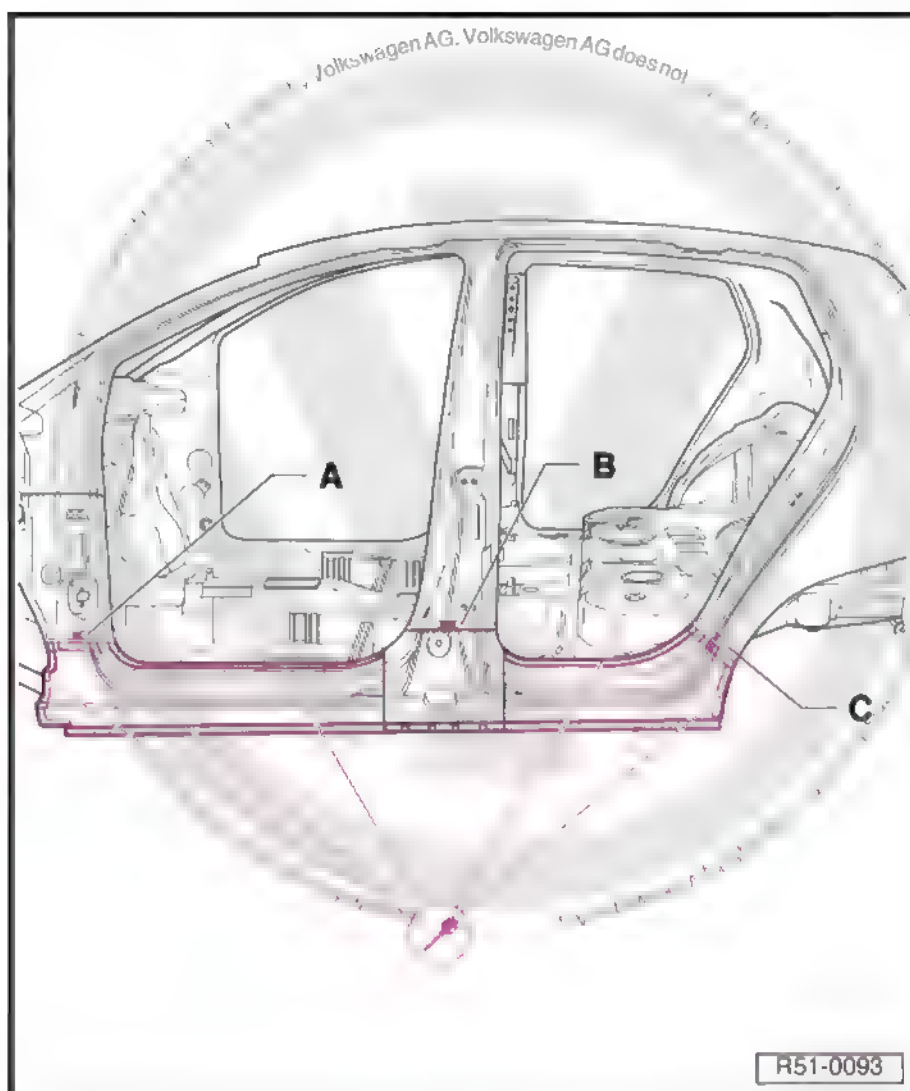
## 9.2 Removal

### 1 - Pillar B cutting line for replacement

- ◆ Cut the pillar A plate on the line -A-.
- ◆ Cut the pillar B plate on the line -B-.
- ◆ Cut the pillar C plate on the line -C-.
- ◆ Always pay attention to damage level.
- ◆ Release the original union.



Note



## 9.3 Installation



Note

*Use of different types and thickness of steel demands appropriate spot welding equipment.*

### 9.3.1 Preparing the replacement part

- ◆ Internal pillar B
- ◆ External pillar B
- ◆ External lower longitudinal member

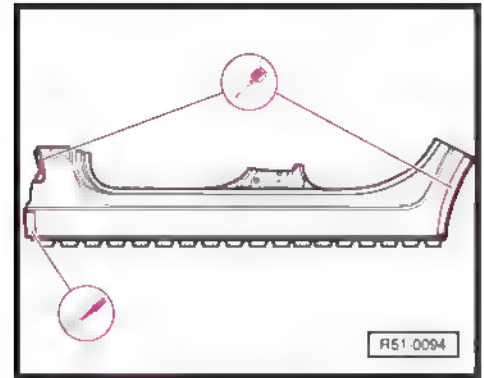


- Transfer the cut to the new part and cut.
- Make  $\varnothing$  8 mm holes for SG - hole fulfillment seam.
- Apply the assembly adhesive -DA 001 730 A1- on the gluing area, with 2 3.5-mm diameter beads.



Note

*The new part shall be welded within 30 minutes, otherwise, the adhesive properties are lost.*

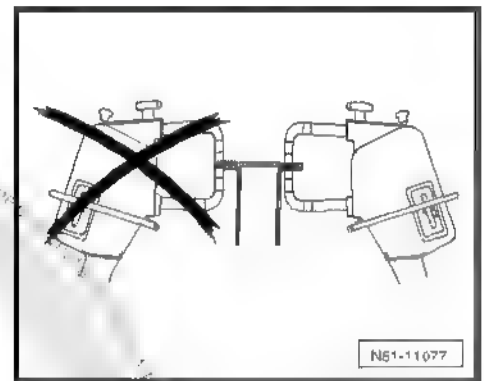


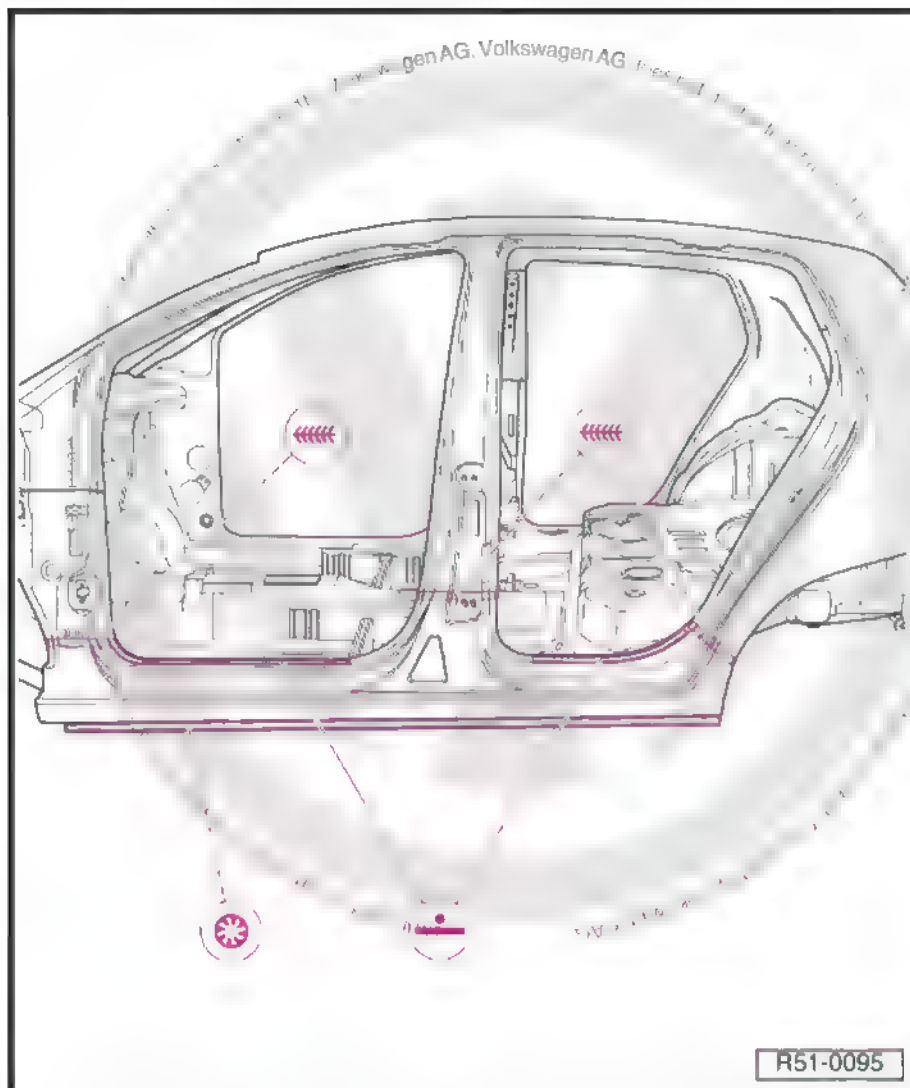
### 9.3.2 Welding



Note

- ◆ *Welding spots RP - spot seam (one row) shall be performed in the center of the area indicated to welding.*
- ◆ *The rigidity of the set is determined by the weld disposition.*





- Adjust and fasten the new part with the vehicle on its wheels or on the alignment platform.
- Check adjustment with complementary parts.
- Weld lower longitudinal member cut with side panel with SG continuous weld.
- Weld in pillar A area with SG - continuous seam.
- Weld lower longitudinal member in upper area with RP - spot seam (one row).
- Weld lower longitudinal member in the lower area with SG - hole fulfillment seam



RO 51 73 55 50

## 10 Front floor - partial part - replace



**DANGER!**

*Follow safety instructions!*

⇒ General Information; Body Repairs, General Body Repairs ;  
Safety instructions .

### 10.1 Tools

Special tools and workshop equipment required

- ◆ Welding unit (inverter) -VAS 6237-
- ◆ Welding unit (inverter) -VAS 6237 L-
- ◆ Welding unit (inverter) -VAS 6238-
- ◆ Welding unit accessory package (inverter) -VAS 6238/1-
- ◆ Welding unit (inverter) -VAS 6239-
- ◆ Welding unit (inverter) -VAS 6249-

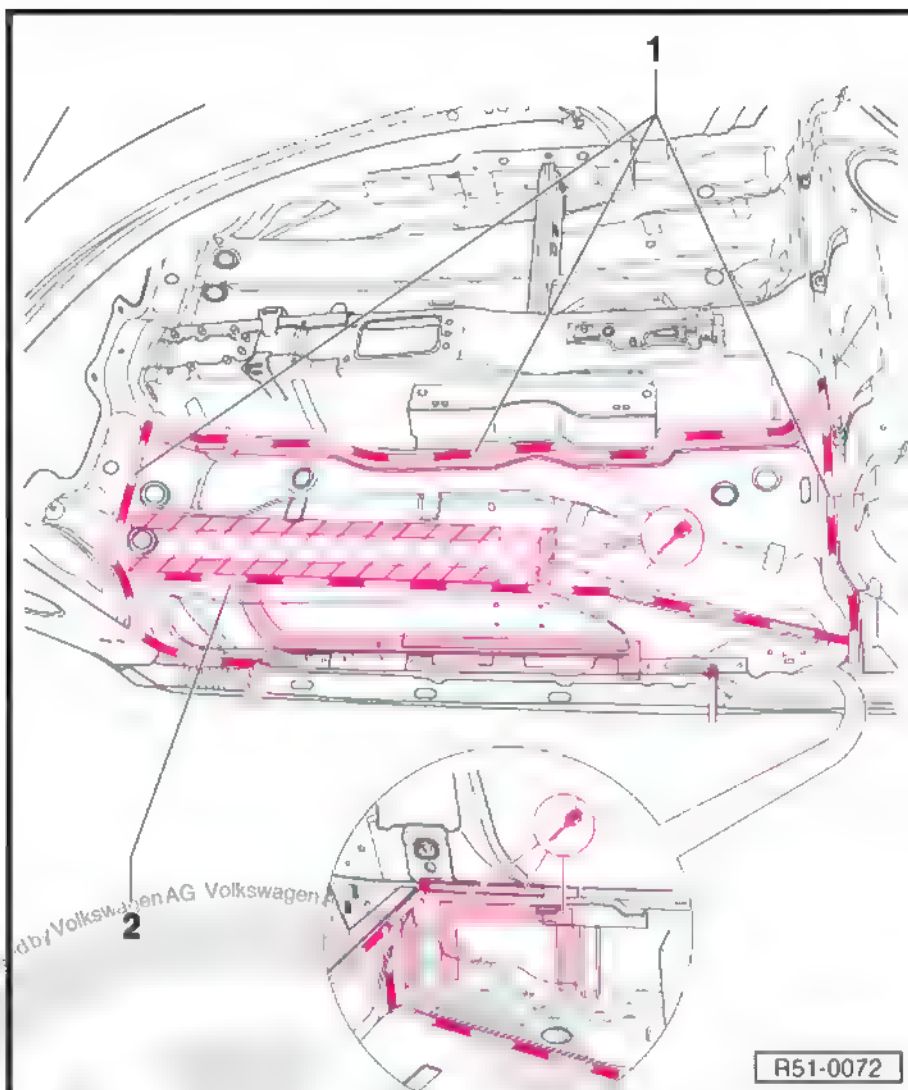


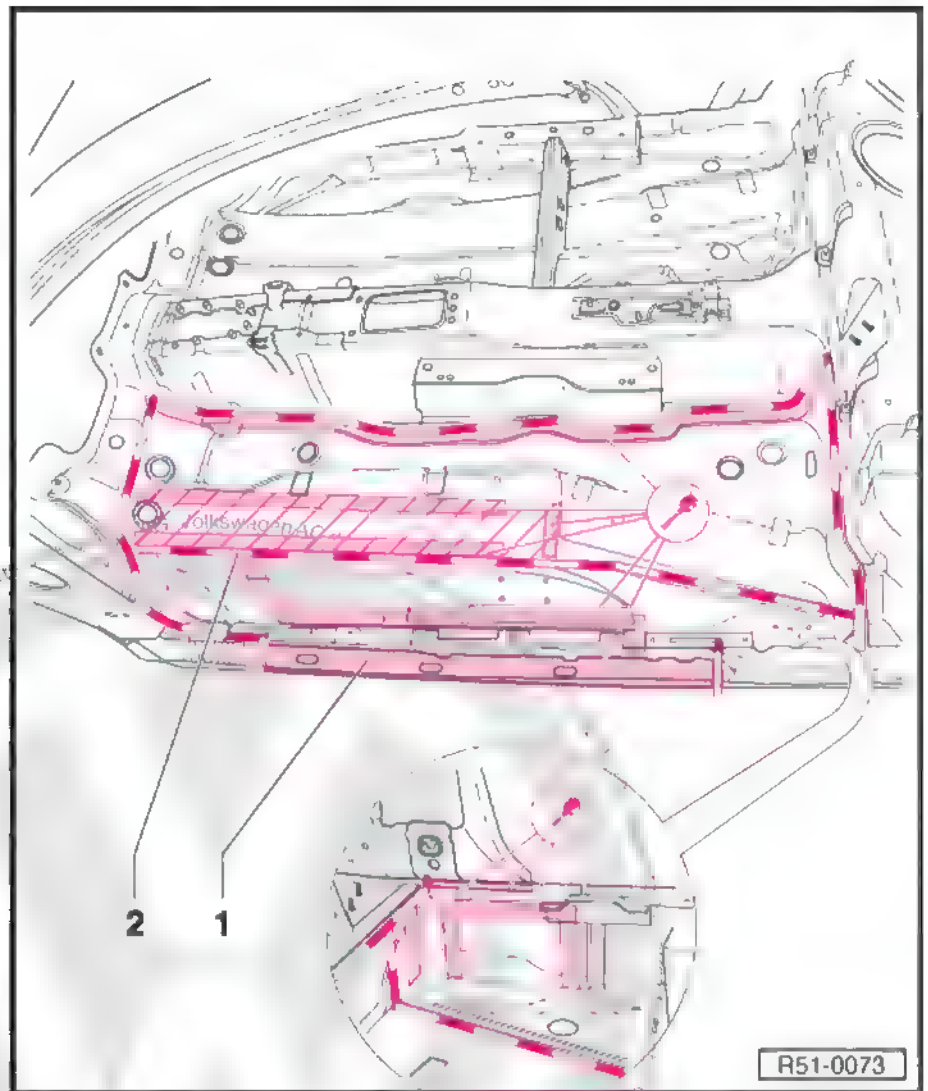
## 10.2 Removal

1 - Complete replacement separation line

2 - Partial replacement separation line

- Perform the separation cut according to the damage.
- Separate the original connection to the rear lower longitudinal member reinforcement and the rear crossmember detail-.





#### Note

- ◆ It makes sense to, along with the floor plate, also replace the connection plate -1- with the lower longitudinal member.
- ◆ Do not perform any separation cut in the central tunnel area.
- ◆ The seat cross member and the guide rail support can only be replaced complete.
- ◆ On the traced area of the front longitudinal member, drill from below.

#### Partial renewal

Perform displaced overlap welding -2- displaced on both sides of the separation cutting, continuous and dotted gas weld seam.

### 10.3 Installation

#### 10.3.1 Prepare the new part

##### Replacement part

- ◆ Floor plate
- ◆ Seat cross member



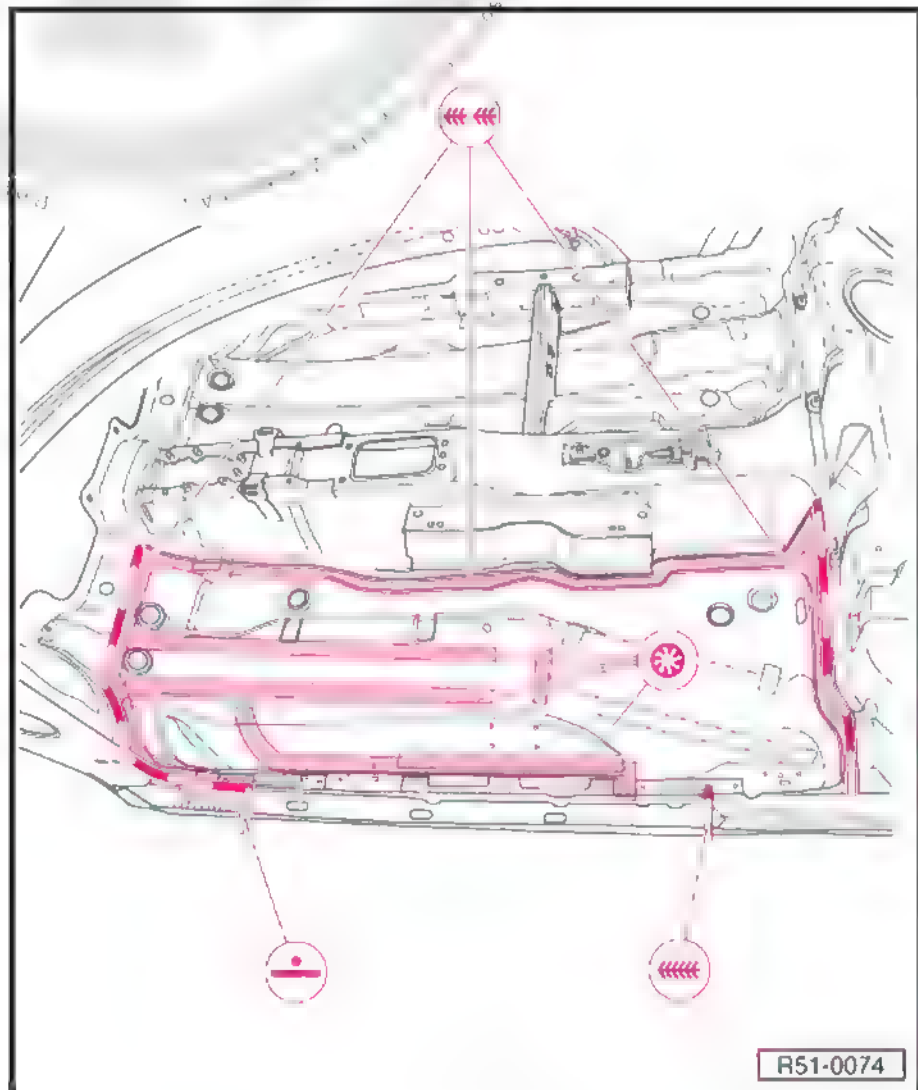
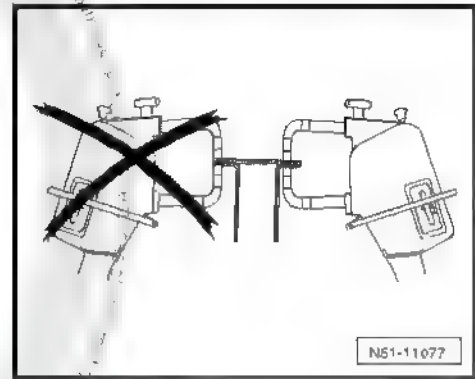
- ◆ Support for seat guide
  - ◆ Connection plate
  - Pass the separation cutting to the new part and cut.
- Consider extra 10 mm of material for overlapping.

### 10.3.2 Welding



#### Note

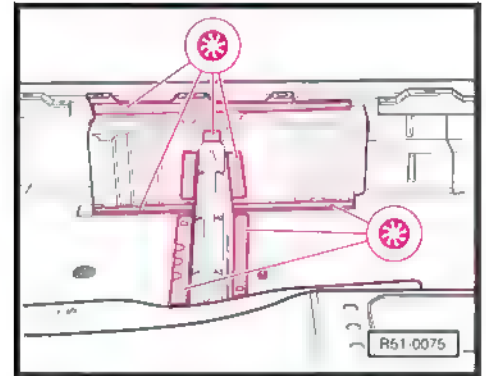
- ◆ *Welding spots RP - spot seam (one row) shall be performed in the center of the area indicated to welding.*
- ◆ *The rigidity of the set is determined by the weld disposition.*



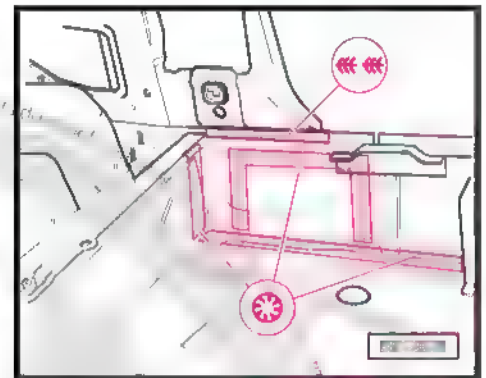




- Perform displaced overlapping welding on both sides of the lower separation cut, continuous and dotted gas weld seam
- Weld the floor plate, gas weld point and resistance weld point.
- Align and fasten the seat cross member.
- Weld the seat crossmember, gas weld point.
- Weld the seat guide rail support, gas weld point.
- Re-establish the original union with reinforcement of the rear part lower longitudinal member, gas weld point.



- Weld the rear lower longitudinal member to the floor plate, continuous and dotted gas weld seam (from below) and gas weld point and continuous and dotted gas weld seam from the inside.





RO 51 49 55 60

## 11 Lower longitudinal member reinforcement - replace



### WARNING

*Follow safety notes!*

Safety instructions ➤ General notes; Body repairs, Body assembly works; Safety notes. .

### 11.1 Tools

Special tools and workshop equipment required

- ◆ Welding unit (inverter) -VAS 6237-
- ◆ Welding unit (inverter) -VAS 6237 L-
- ◆ Welding unit (inverter) -VAS 6238-
- ◆ Welding unit accessory package (inverter) -VAS 6238/1-
- ◆ Welding unit (inverter) -VAS 6239-
- ◆ Welding unit (inverter) -VAS 6249-

### 11.2 Removal

- ◆ Lower longitudinal member, external section, removed.

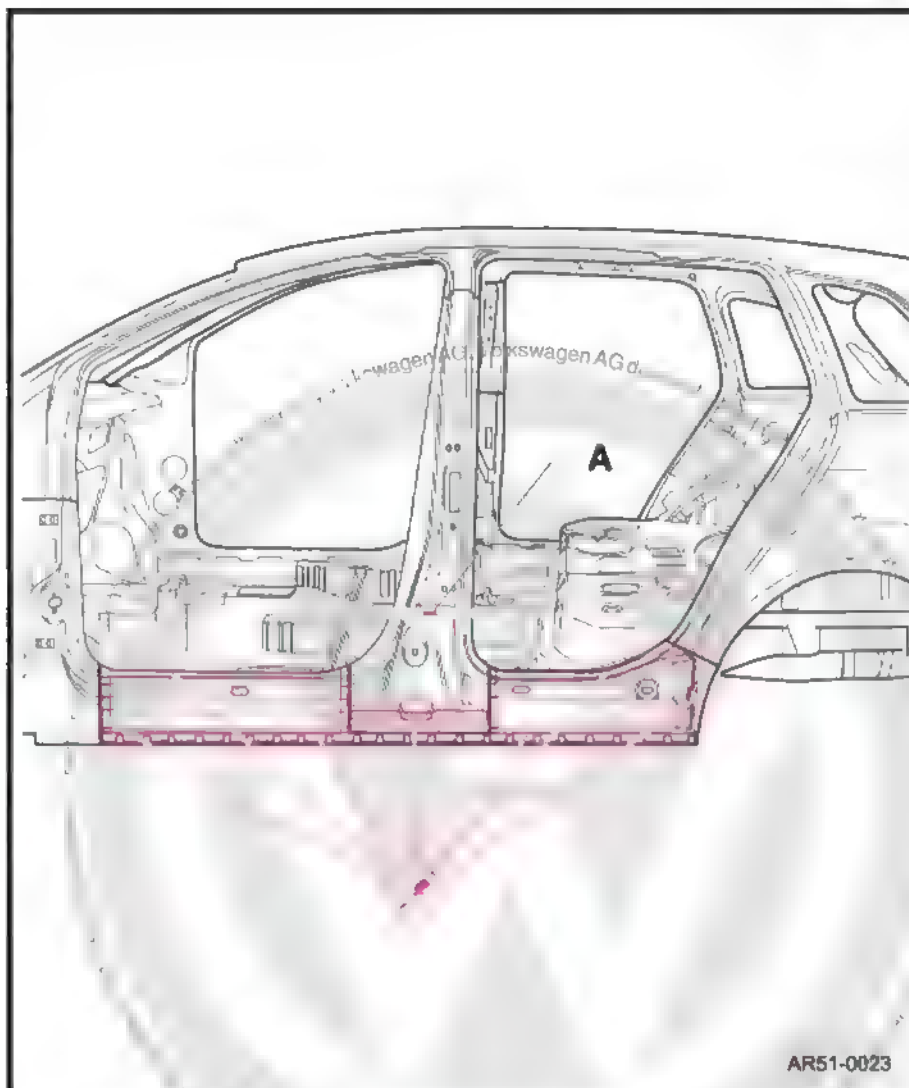


#### 1 - Glued area

- ◆ Perform separation cuts on the lower longitudinal member.
- ◆ Cut the internal pillar B plate on the line -A-.
- ◆ Separate original joints
- ◆ Remove the remaining parts.
- ◆ Remove all adhesive residues and sand the adhesion surfaces until metal is visible.



Note



### 11.3 Installation



Note

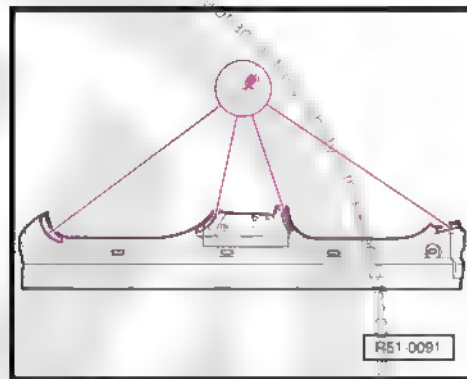
*Use of different types and thickness of steel demands appropriate spot welding equipment.*

#### 11.3.1 Prepare new part

- ◆ Partial internal pillar B
- ◆ Lower longitudinal member reinforcement



- Transfer the cut to the new part and cut.
- Make  $\varnothing$  8 mm holes for SG - hole fulfillment seam.

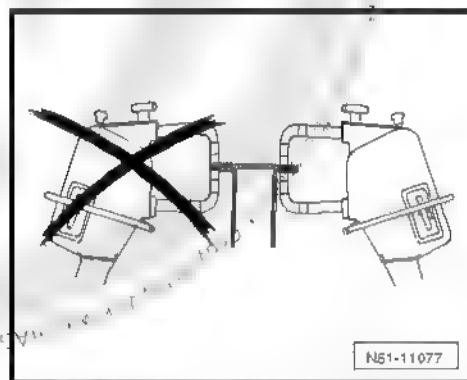


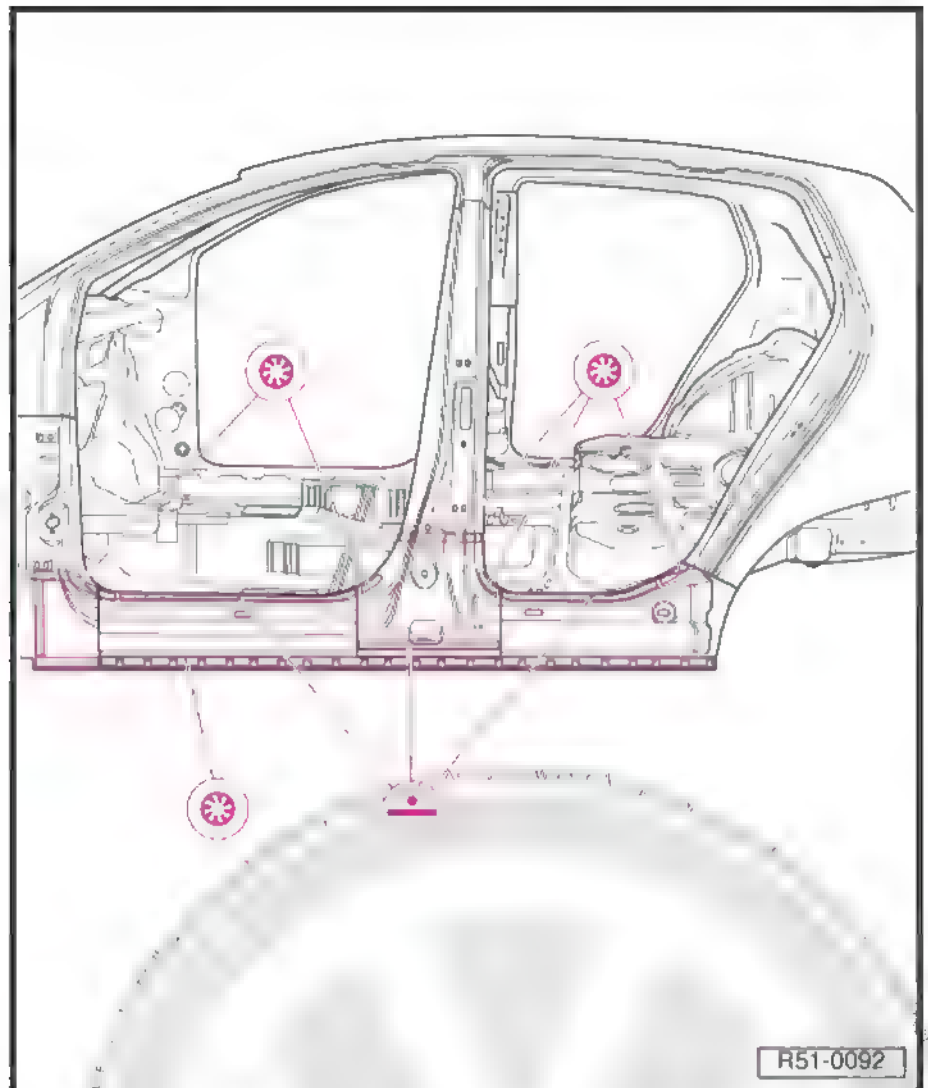
### 11.3.2 Welding



#### Note

- ◆ *Welding spots RP - spot seam (one row) shall be performed in the center of the area indicated to welding.*
- ◆ *The rigidity of the set is determined by the weld disposition.*





- Adjust and fasten the new part with the vehicle on its wheels or on the alignment platform.
- Check adjustment with complementary parts.
- Weld lower longitudinal member cut with side panel with SG - hole fulfillment seam.
- Weld in pillar A area with SG - hole fulfillment seam.
- Weld inner B-pillar region, partially.
- Weld lower longitudinal member in upper area with RP - spot seam (one row).
- Weld lower longitudinal member in the lower area with SG - hole fulfillment seam.



## 53 – Body - Rear section

RO 53 05 55 00

### 1 Rear panel and latch mounting - replace



**DANGER!**

*Follow safety instructions!*

*Since gases extremely harmful to people's health and the environment are created when separating with spark-generating equipment and tools or when tin-plating in areas containing foam, such procedures must always be avoided when welding.*

⇒ General Information; Body Repairs, General Body Repairs ;  
Safety instructions .

#### 1.1 Tools

Special tools and workshop equipment required

- ◆ Welding unit (inverter) -VAS 6237-
- ◆ Welding unit (inverter) -VAS 6237 L-
- ◆ Welding unit (inverter) -VAS 6238-
- ◆ Welding unit accessory package (inverter) -VAS 6238/1-
- ◆ Welding unit (inverter) -VAS 6239-
- ◆ Welding unit (inverter) -VAS 6249-



## 1.2 Removal



- Separate end plate (also separate the inner latch mounting).
- Release the original union.

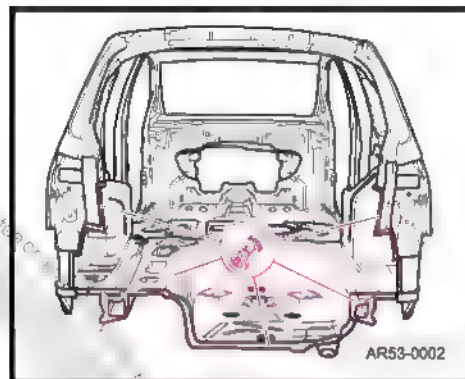


### Note

*Foam residues shall be scraped as much as possible before sanding tasks.*



- Remove the remaining parts.

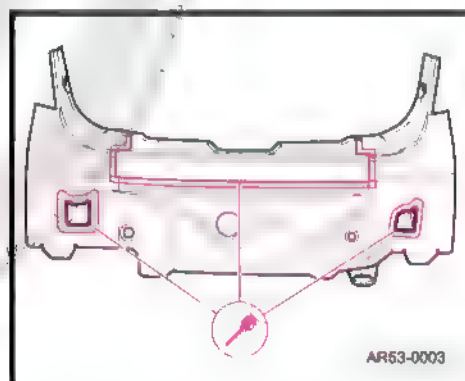


## 1.3 Installation

### 1.3.1 Prepare the new part

Replacement part

- ◆ Rear end plate
- ◆ Molded foam part
- Drill holes for gas weld points,  $\varnothing$  8 mm.



### 1.3.2 Molded foam parts

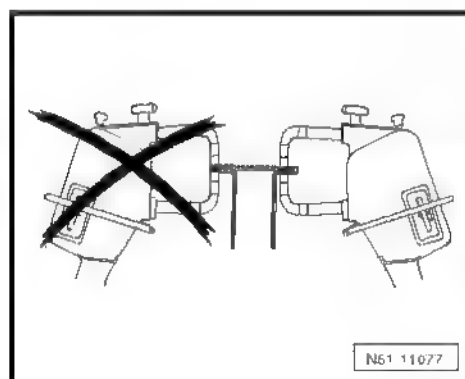
Follow repair instructions [⇒ page 3](#).

### 1.3.3 Welding



Note

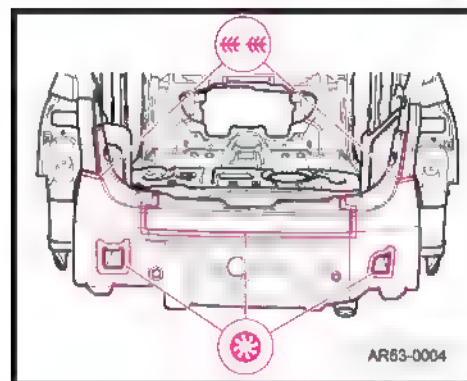
- ◆ *Welding spots RP - spot seam (one row) shall be performed in the center of the area indicated to welding.*
- ◆ *The rigidity of the set is determined by the weld disposition.*
- Adjust and fasten the new part with the vehicle on its wheels or on the alignment platform.
- Check the rear lid closing function.
- Check adjustment with complementary parts.



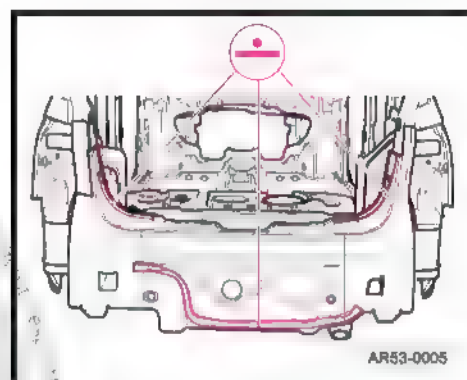




- Weld the end plate, gas weld point and continuous gas weld seam



- Re-establish the original union or resistance weld point.
- Weld the latch mounting ⇒ [page 134](#) .





RO 53 09 55 00

## 2 Latch mounting inner portion - replace



**DANGER!**

*Follow safety instructions!*

Safety instructions ⇒ General Information; Body Repairs, General  
Body Repairs ; Safety instructions .

### 2.1 Tools

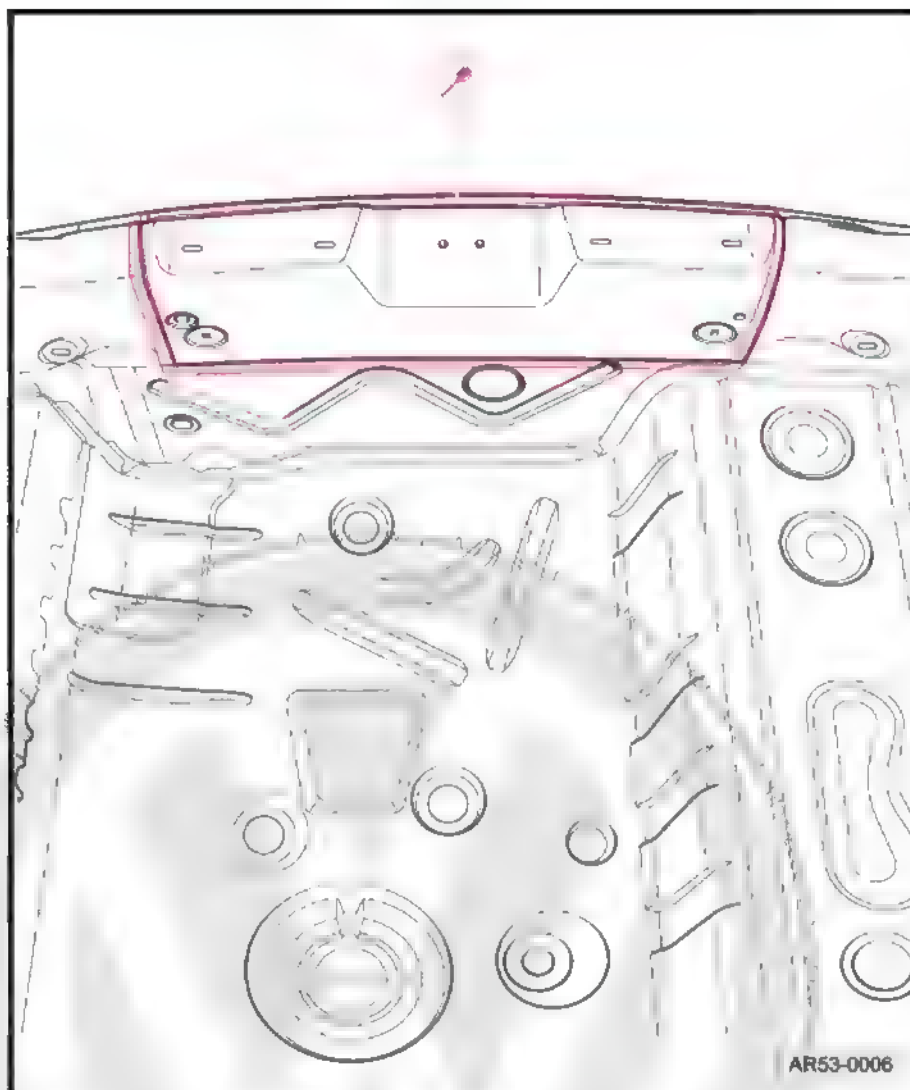
Special tools and workshop equipment required

- ◆ Welding unit (inverter) -VAS 6237-
- ◆ Welding unit (inverter) -VAS 6237 L-
- ◆ Welding unit (inverter) -VAS 6238-
- ◆ Welding unit accessory package (inverter) -VAS 6238/1-
- ◆ Welding unit (inverter) -VAS 6239-
- ◆ Welding unit (inverter) -VAS 6249-

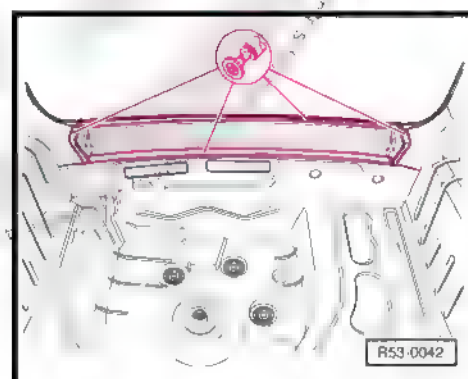


## 2.2 Removal

### 1 - Glued area



- Undo plate connections.
- Remove plate residues.
- Remove all adhesive residues and sand the adhesion surfaces until metal is visible.





## 2.3 Installation



### Note

*Use of different types and thickness of steel demands appropriate spot welding equipment.*

### 2.3.1 Prepare the new part

#### Replacement part

- Inner latch mounting
- 2K body adhesive -D 180 KD3 A2-
- Drill the new part.
- Apply adhesive on the adhesive area. 2 seams with 3.5 mm diameter.



### Note

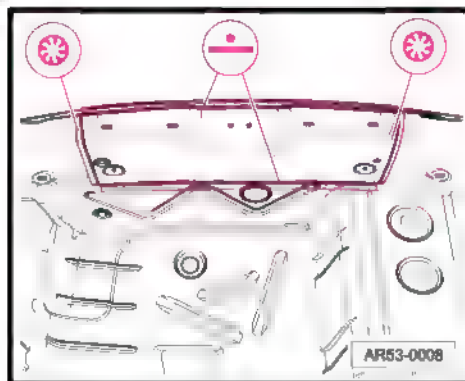
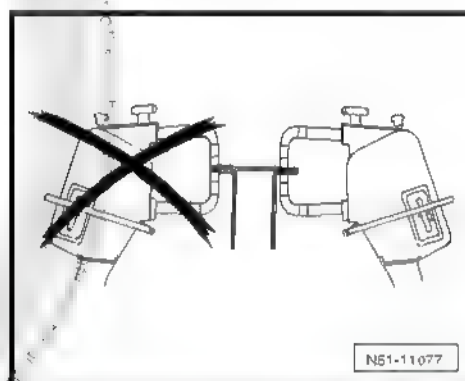
*The new part shall be welded within 30 minutes, otherwise, the adhesive properties are lost.*

### 2.3.2 Welding



### Note

- *Welding spots RP - spot seam (one row) shall be performed in the center of the area indicated to welding.*
- *The rigidity of the set is determined by the weld disposition.*
- Adjust and fasten the new part with the vehicle on its wheels or on the alignment platform.
- Check the rear door closing operation.
- Weld the new part, gas weld point.
- Re-establish the original union, resistance weld point.





RO 53 10 55 50

### 3 Tail light housing - replace



**DANGER!**

*Follow safety instructions!*

⇒ General Information; Body Repairs, General Body Repairs ;  
Safety instructions .

#### 3.1 Tools

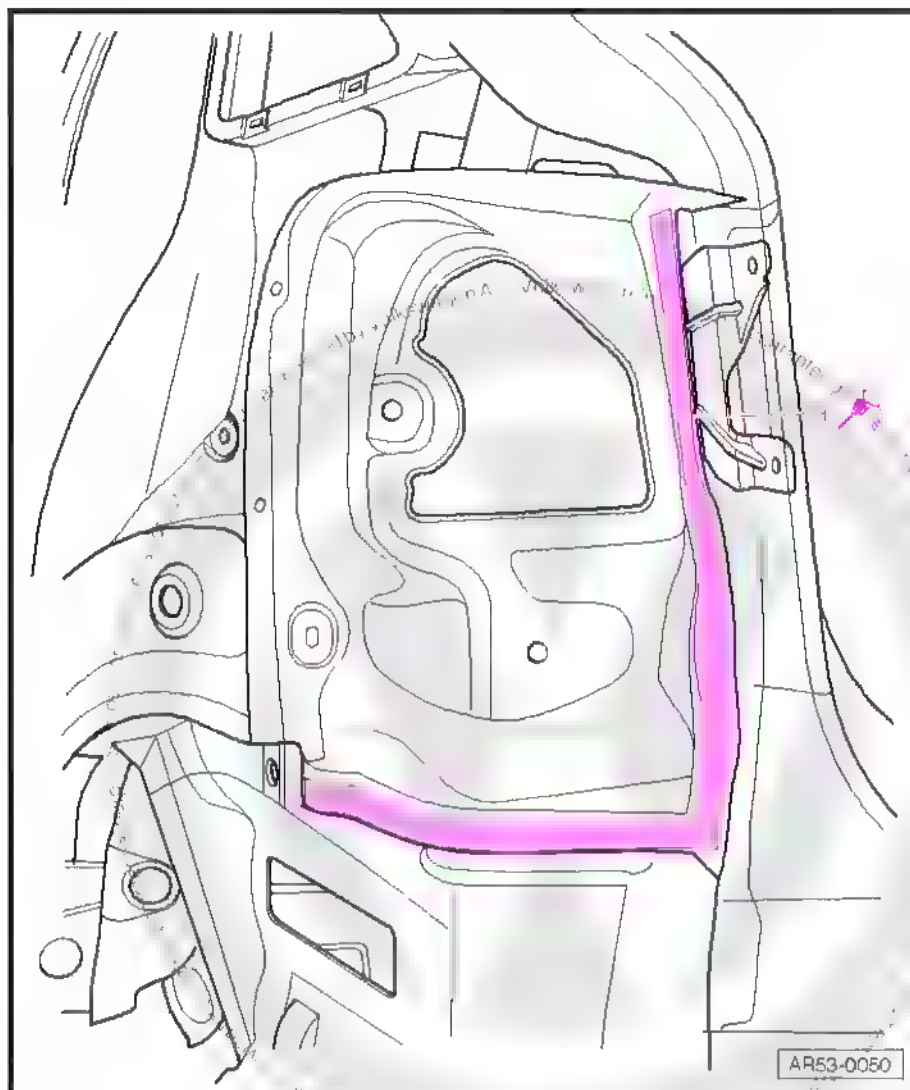
Special tools and workshop equipment required

- ◆ Welding unit (inverter) -VAS 6237-
- ◆ Welding unit (inverter) -VAS 6237 L-
- ◆ Welding unit (inverter) -VAS 6238-
- ◆ Welding unit accessory package (inverter) -VAS 6238/1-
- ◆ Welding unit (inverter) -VAS 6239-
- ◆ Welding unit (inverter) -VAS 6249-

#### 3.2 Removal

- Side panel removed





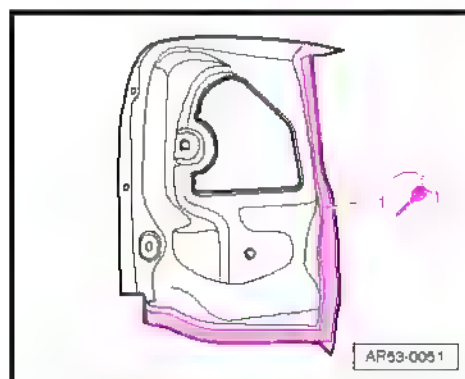
- Remove the remaining parts.

### 3.3 Installation

#### 3.3.1 Prepare the new part

Replacement part

- ◆ Tail light housing
- Drill holes for gas weld points,  $\varnothing$  8 mm.





### 3.3.2 Welding

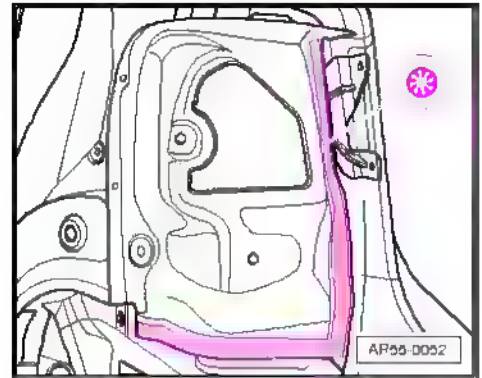
- Adjust and fasten the new part to the side panel.
- Check the adjustment between the tail light and the rear door.
- Weld the new part, gas weld point.



#### Note

*Other connections are welded together with the side panel welding.*

- Weld side panel ⇒ [page 145](#) .





RO 53 22 55 00

## 4 Tow hook - replace



**DANGER!**

*Follow **safety instructions!***

⇒ General Information; Body Repairs, General Body Repairs ;  
Safety instructions .

### 4.1 Tools

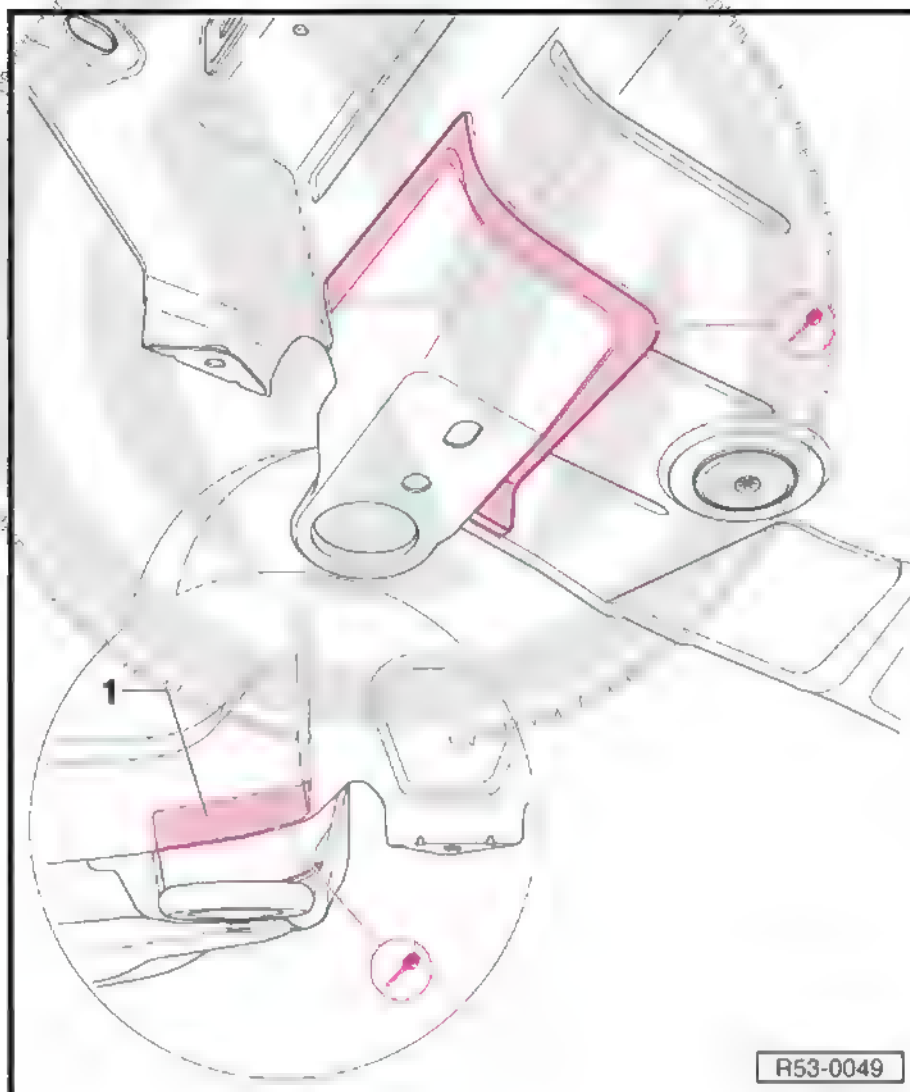
Special tools and workshop equipment required

- ◆ Welding unit (inverter) -VAS 6237-
- ◆ Welding unit (inverter) -VAS 6237 L-
- ◆ Welding unit (inverter) -VAS 6238-
- ◆ Welding unit accessory package (inverter) -VAS 6238/1-
- ◆ Welding unit (inverter) -VAS 6239-
- ◆ Welding unit (inverter) -VAS 6249-





## 4.2 Removal



- Release the original union.



### Note

*The original connection must be drilled from below.*

- Drill spot welded connections -1- with the rear end plate.
- Remove the remaining parts.

## 4.3 Installation

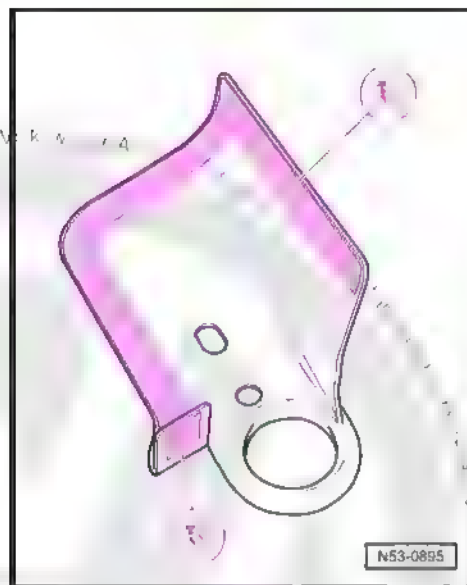
### 4.3.1 Prepare the new part

Replacement part

- ◆ Tow hook

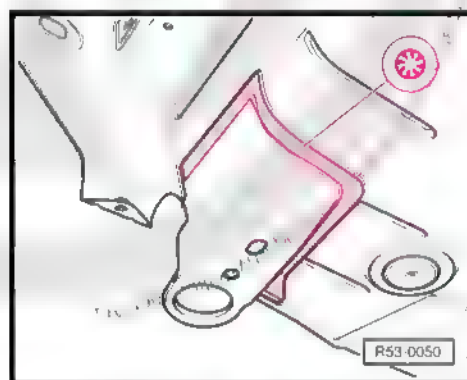


- Drill the new part.

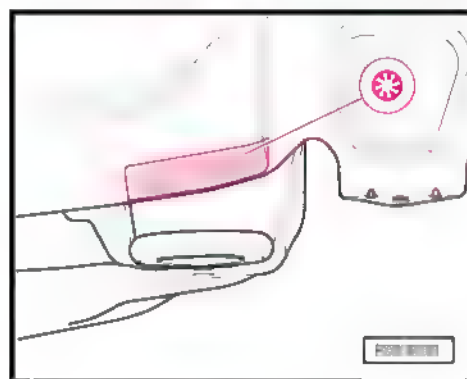


#### 4.3.2 Welding

- Adjust and fix the towing eye.
- Weld the towing eye, gas weld point.



- Re-establish the other connections with the end plate, gas weld point.





RO 53 48 55 52

## 5 Front longitudinal member (partial part) - replace



### DANGER!

*Follow safety instructions!*

*Since gases extremely harmful to people's health and the environment are created when separating with spark-generating equipment and tools or when tin-plating in areas containing foam, once welding, such procedures must always be avoided.*

⇒ General Information; Body Repairs, General Body Repairs ; Safety instructions .

### 5.1 Tools

Special tools and workshop equipment required

- ◆ Welding unit (inverter) -VAS 6237-
- ◆ Welding unit (inverter) -VAS 6237 L-
- ◆ Welding unit (inverter) -VAS 6238-
- ◆ Welding unit accessory package (inverter) -VAS 6238/1-
- ◆ Welding unit (inverter) -VAS 6239-
- ◆ Welding unit (inverter) -VAS 6249-

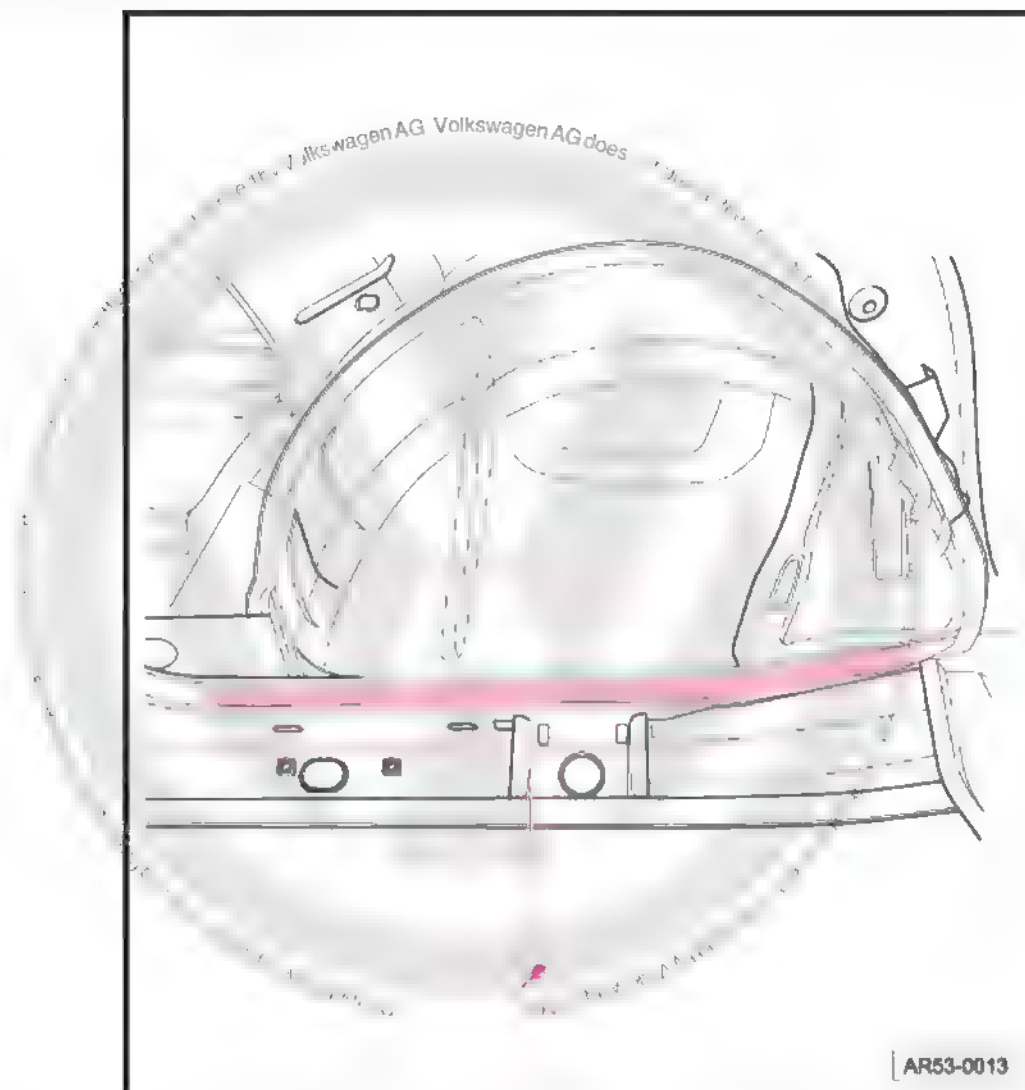
### 5.2 Removal

- The end plate is separated.
- The spare wheel housing is separated.

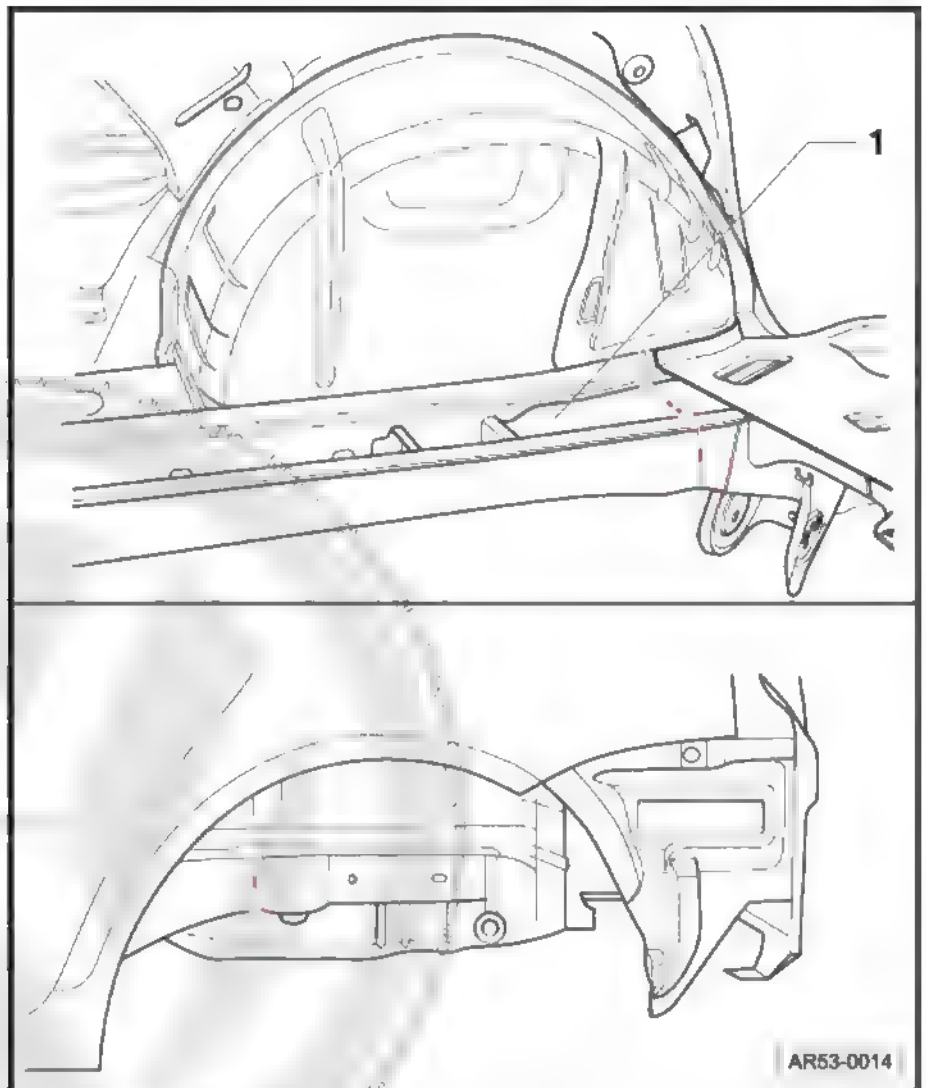


### Note

*Foam residues must be removed as much as possible before sanding operations.*



- Loosen the original union with wheelhouse.



- Perform the separation cutting as shown. Do not damage internal reinforcements -1-.
- Remove the remaining parts.

## 5.3 Installation

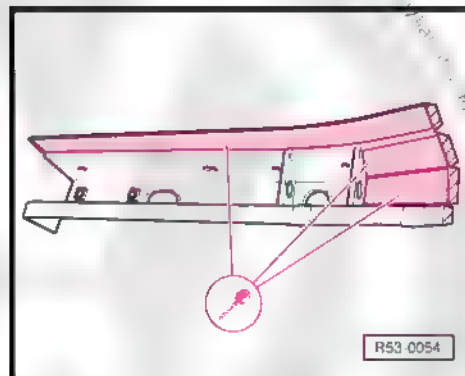
### 5.3.1 Prepare the new part

#### Replacement part

- ◆ Partial part longitudinal member
- ◆ Molded foam part
- Pass the separation cut to the new part and cut. In this case, you must consider an extra 15 mm of material for the overlapping.



- Drill holes for gas weld points,  $\varnothing$  8 mm

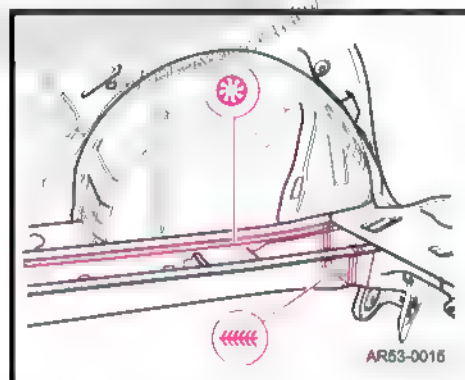


### 5.3.2 Molded foam parts

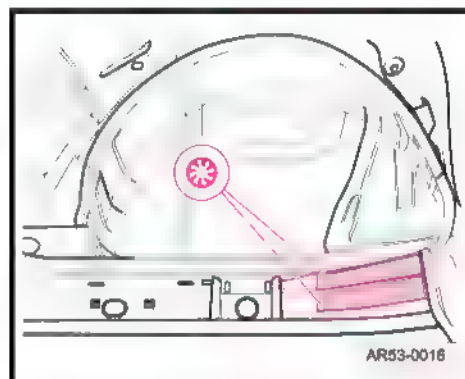
Follow repair instructions [⇒ page 3](#).

### 5.3.3 Welding

- Adjust and fasten the new part to the spare wheel housing and with the vehicle on the alignment platform.
- Weld the longitudinal member, continuous gas weld seam and gas weld point.



- Re-establish the other connections with inner longitudinal member reinforcement, gas weld point.





RO 53 55 55 10

## 6 Side panel - replace



### WARNING

*Follow safety notes!*

Safety instructions ⇒ General Information, Body Repairs, General Body Repairs ; Safety instructions .

### 6.1 Tools

Special tools and workshop equipment required

- ◆ Welding unit (inverter) -VAS 6237-
- ◆ Welding unit (inverter) -VAS 6237 L-
- ◆ Welding unit (inverter) -VAS 6238-
- ◆ Welding unit accessory package (inverter) -VAS 6238/1-
- ◆ Welding unit (inverter) -VAS 6239-
- ◆ Welding unit (inverter) -VAS 6249-





## 6.2 Removal

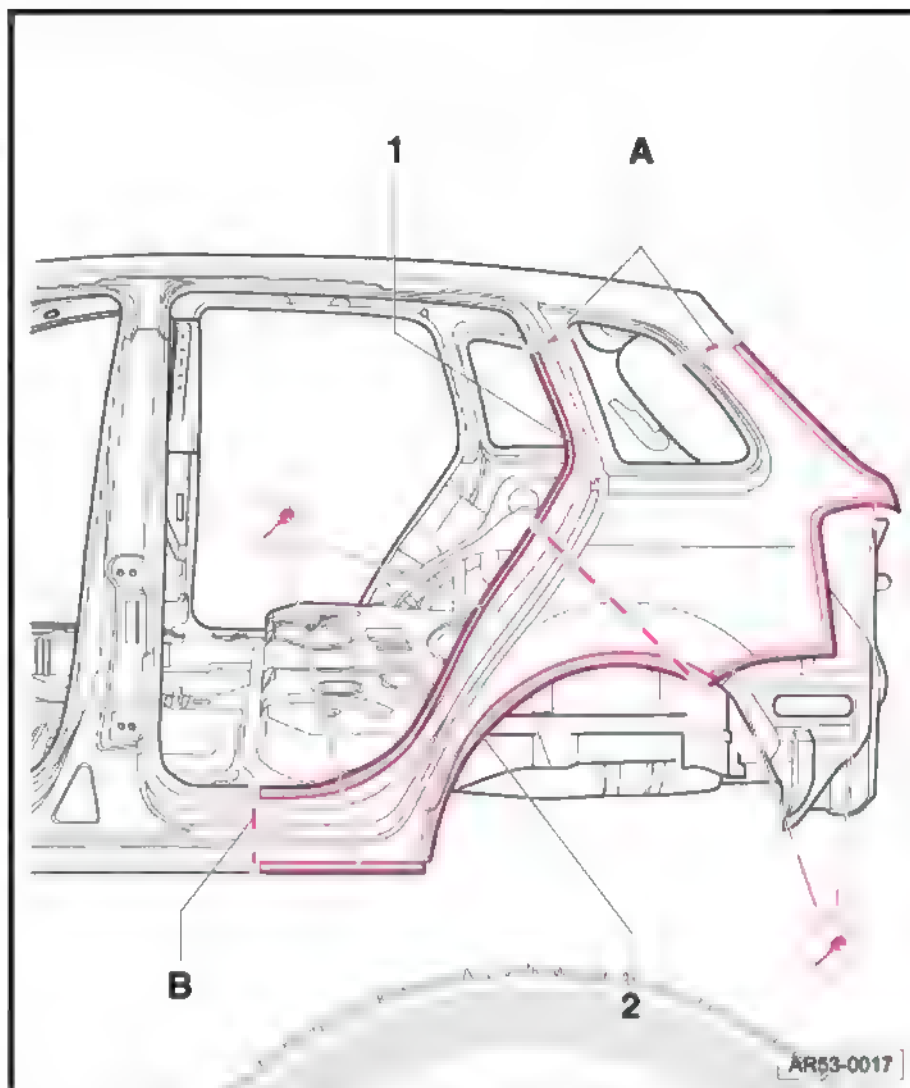
1 - Separation line for partial replacement

2 - Glued area

- ◆ Make the separation cutting -A- according to damage.
- ◆ Make the separation cutting -B- as indicated. Do not damage internal reinforcements.
- ◆ Roughly separate side panel.
- ◆ Release the original union.



### Note



### 6.2.1 Part replacement

A partial replacement is possible with the indicated separation cutting.

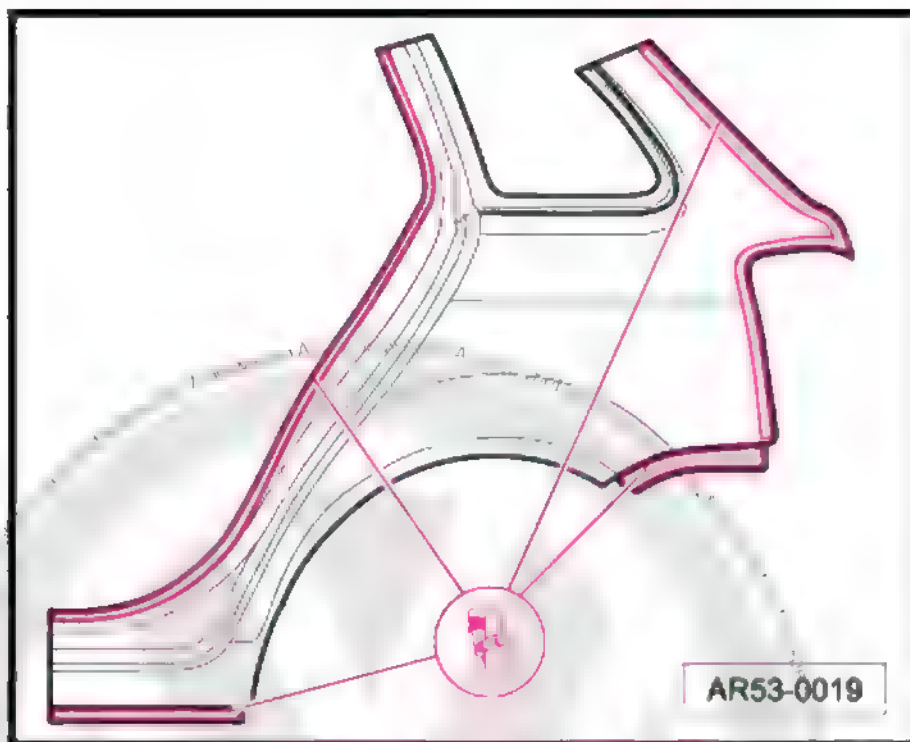
Only do separation cuts using Pneumatic sabre saw -VAG 1523A-.

- Remove the remaining parts.
- Remove all adhesive residues and sand the adhesion surfaces until metal is visible.
- Clean the edge area until it is free from powder and grease.





## 6.3 Installation



### 6.3.1 Prepare the new part

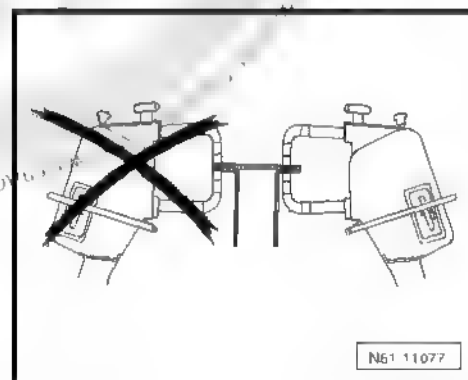
- ◆ Side panel
- Pass the separation cuts to new part and cut.
- Drill 8mm holes for SG weld points.

### 6.3.2 Welding



#### Note

- ◆ *Welding spots RP - spot seam (one row) shall be performed in the center of the area indicated to welding.*
- ◆ *The rigidity of the set is determined by the weld disposition.*





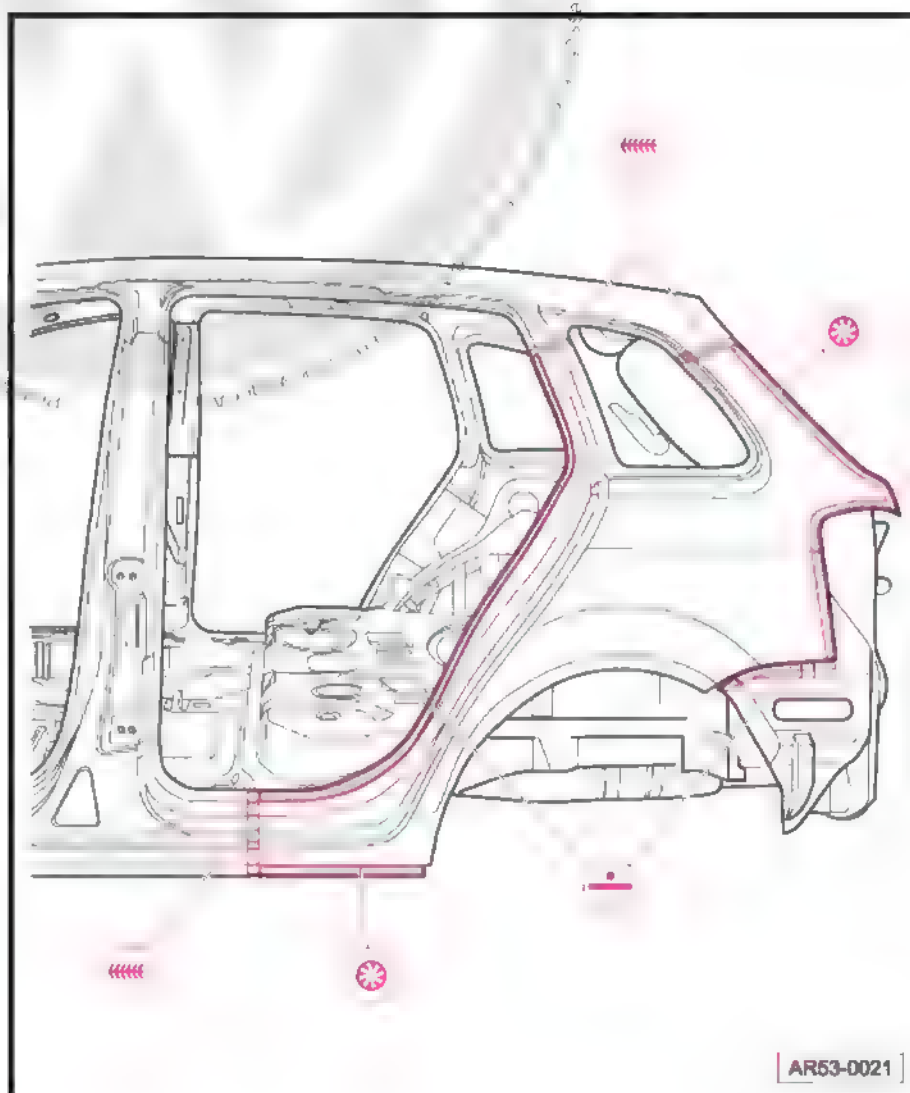
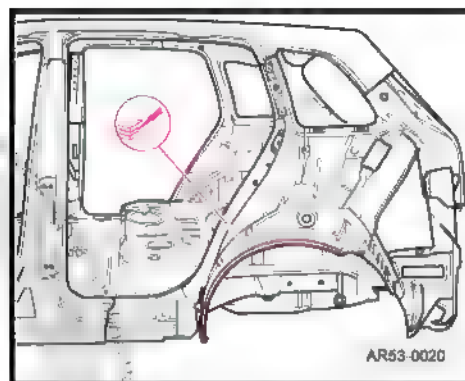
- Apply the Adhesive -DA 001 736 A1- on the adhesion area, with two 3.5-mm diameter beads.



**Note**

*The new part shall be welded within 30 minutes, otherwise, the adhesive properties are lost.*

- Adjust and fasten the new part with the vehicle on its wheels or on the alignment platform.
- Check the adjustment with doors, tail lights and rear door.
- Weld on C-pillar region and lower longitudinal member with SG continuous weld.



- Weld the lower longitudinal member on the upper part with RP weld point.
- Weld the lower longitudinal member on the lower part with SG weld point.
- Weld the side panel on the rear lid cut and on the tail light housing with SG weld point.



- Contour the wheel area flange
- Clean adhesive excess and seal the wheel area



**Note**

*Before welding, on the right side panel, you must apply the butyl sealing cord to the fuel reservoir filling nozzle area*





RO 53 80 55 50

## 7 Spare wheel housing - replace



**DANGER!**

*Follow safety instructions!*

⇒ General Information; Body Repairs, General Body Repairs ;  
Safety instructions .

### 7.1 Tools

Special tools and workshop equipment required

- ◆ Welding unit (inverter) -VAS 6237-
- ◆ Welding unit (inverter) -VAS 6237 L-
- ◆ Welding unit (inverter) -VAS 6238-
- ◆ Welding unit accessory package (inverter) -VAS 6238/1-
- ◆ Welding unit (inverter) -VAS 6239-
- ◆ Welding unit (inverter) -VAS 6249-

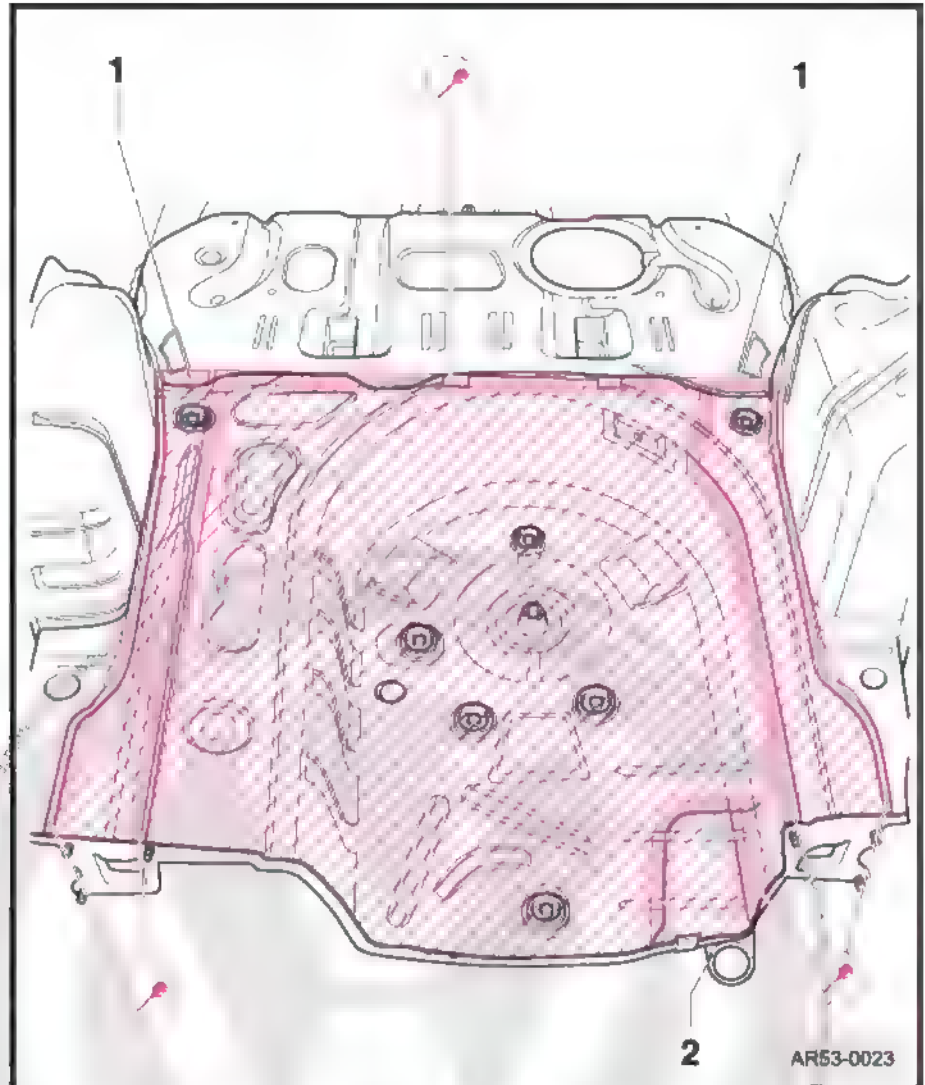
### 7.2 Removal

- The end plate is separated.





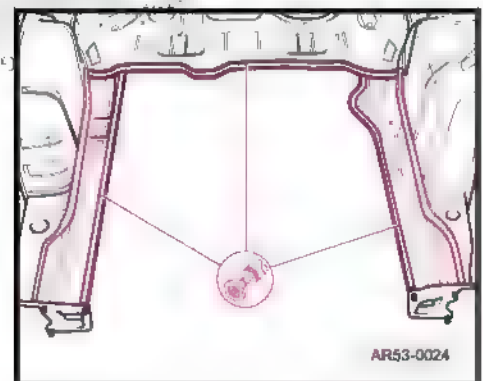
1 - Glued area



- Drill the original connection with the front floor plate and with the right and left longitudinal members.
- Drill the rear reinforcement -2- right side.
- Drill the tow hook eyelet -3- from below and, if necessary, reuse.

Remove and install the tow hook eyelet -2- page 138 .

- Remove the remaining parts.
- Remove all adhesive residues and sand the adhesion surfaces until metal is visible.





## 7.3 Installation

### 7.3.1 Prepare the new part

#### Replacement part

- ◆ Spare wheel housing (spare part denomination floor panel)
- ◆ 2K body adhesive -D 180 KD3 A2-
- Drill holes for gas weld points
- Apply adhesive on the adhesive area. 2 beads with 3.5 mm diameter.



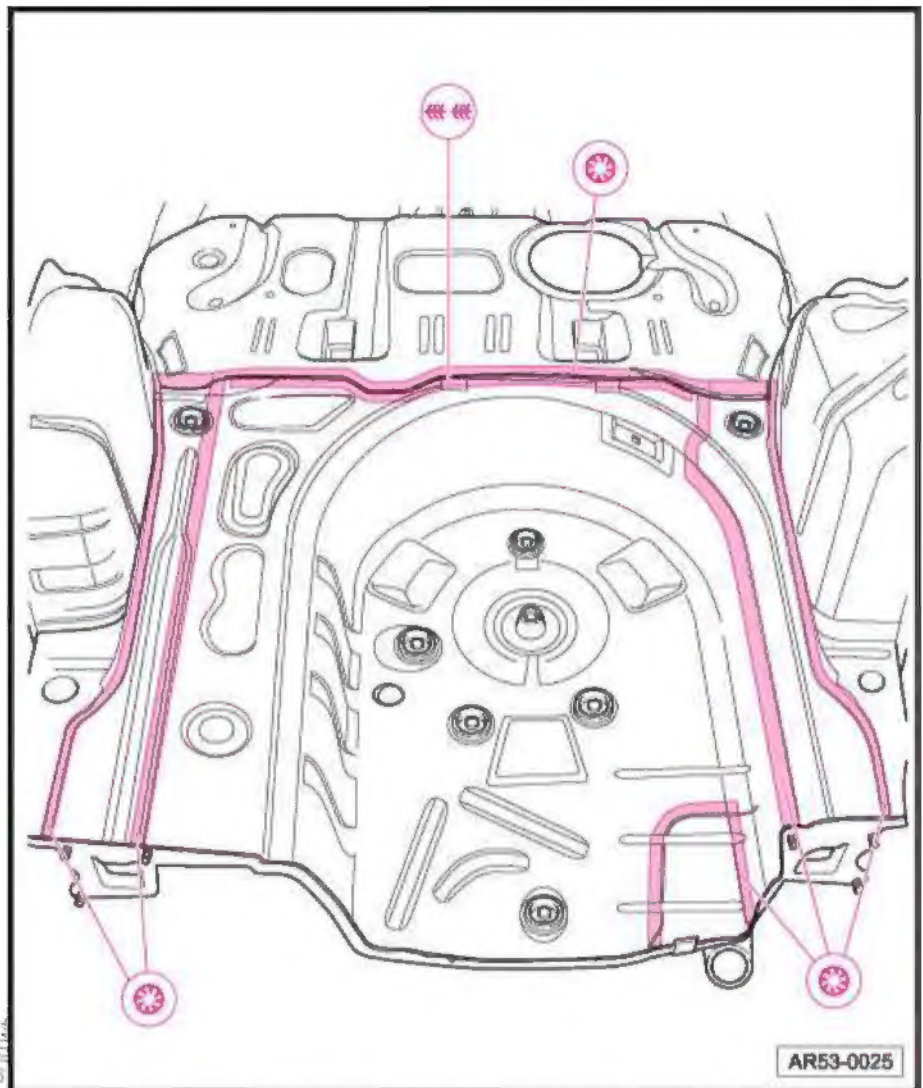
#### Note

*The new part shall be welded within 30 minutes, otherwise, the adhesive properties are lost.*

### 7.3.2 Welding

- Adjust and fasten the new part with the vehicle on its wheels or on the alignment platform.
- Check the adjustment with the rear end plate.





- Weld the spare tire housing in the connection area with the floor plate, gas weld point.
- Weld the spare tire housing in the connection area with the floor plate, continuous and dotted gas weld seam.
- Weld all other connections with rear longitudinal members, gas weld point.
- Weld the towing eye reinforcement, gas weld point.
- Weld rear end plate ➔ [page 130](#) .



RO: 53 80 55 52

## 8 Spare wheel housing (partial part) - replace



**DANGER!**

*Follow safety instructions!*

⇒ General Information; Body Repairs, General Body Repairs ;  
Safety instructions .

### 8.1 Tools

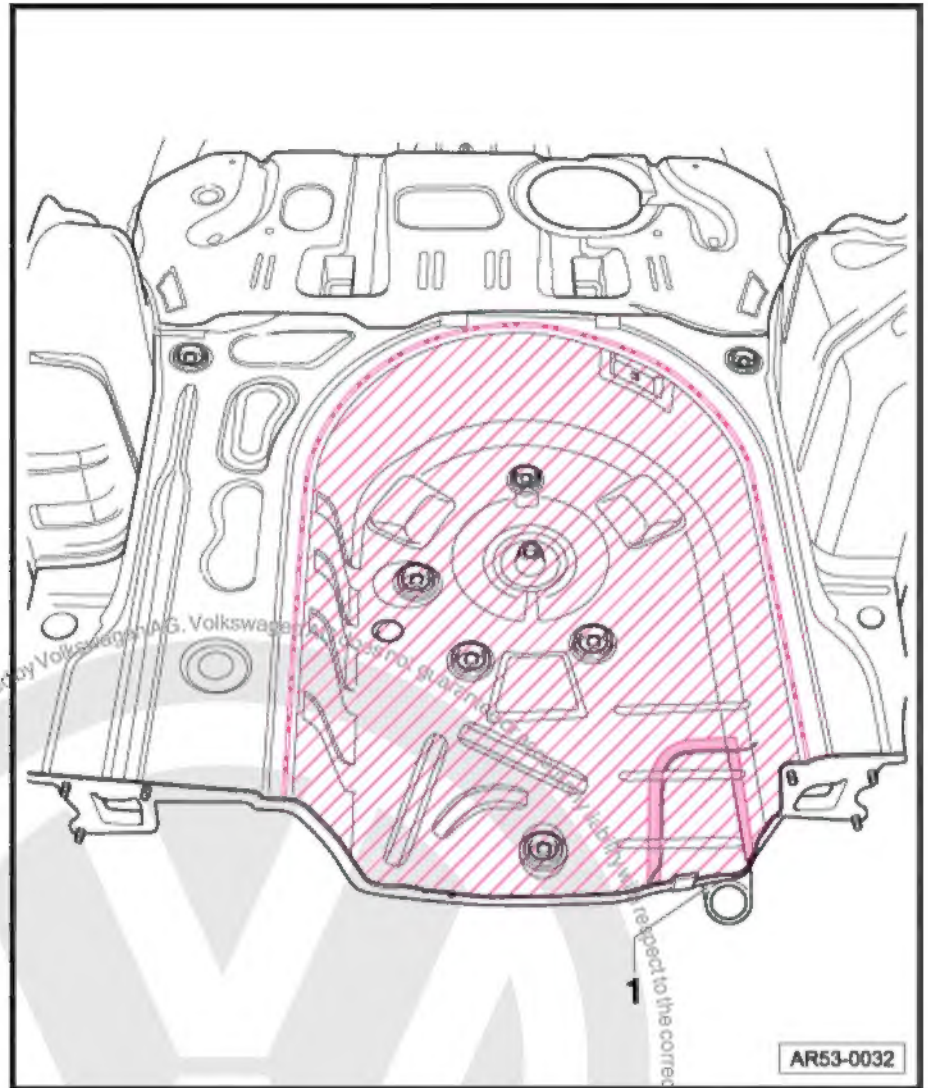
Special tools and workshop equipment required

- ◆ Welding unit (inverter) -VAS 6237-
- ◆ Welding unit (inverter) -VAS 6237 L-
- ◆ Welding unit (inverter) -VAS 6238-
- ◆ Welding unit accessory package (inverter) -VAS 6238/1-
- ◆ Welding unit (inverter) -VAS 6239-
- ◆ Welding unit (inverter) -VAS 6249-

### 8.2 Removal

- The end plate is separated.





- Perform the separation cut according to the damage.
- Perform the separation cut so to allow lowering of the body side, in this case, include 15 mm extra material for overlapping.
- Drill right rear reinforcement -1- and the right tow hook eyelet -2- and, if necessary, reuse.
- Separate the original union to the right rear lower longitudinal member.
- Remove the remaining parts.

## 8.3 Installation

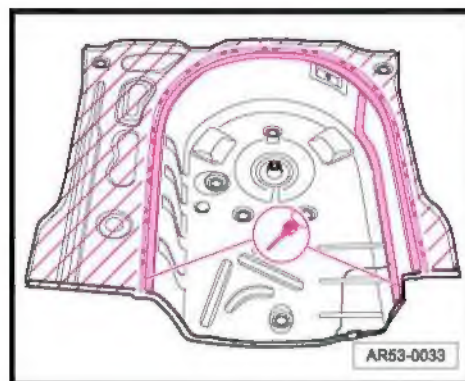
### 8.3.1 Prepare the new part

Replacement part

- ◆ Spare wheel housing (spare part denomination: floor panel)
- Pass the separation cut to the new part and cut.

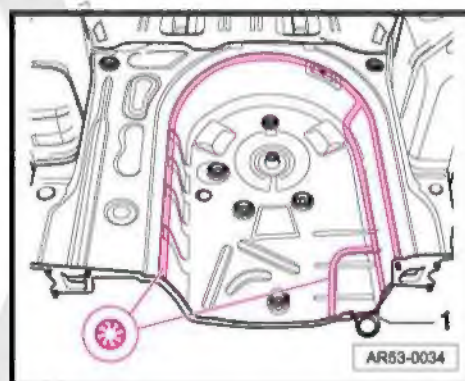


- Drill holes for gas weld points, distance between holes approx. 20 mm.
- Lower on the body side.



### 8.3.2 Welding

- Adjust and fasten the new part with the vehicle on its wheels or on the alignment platform.
- Check the adjustment with the rear end plate.
- Weld the spare wheel housing (partial part), gas weld point.
- Separate the other connections with the right rear longitudinal member, gas weld point.
- Weld right rear reinforcement -1- and tow hook eyelet -2-, gas weld point in the hole.
- Weld the tow hook eyelet ⇒ [page 140](#) .
- Weld rear end plate ⇒ [page 130](#) .



05.11